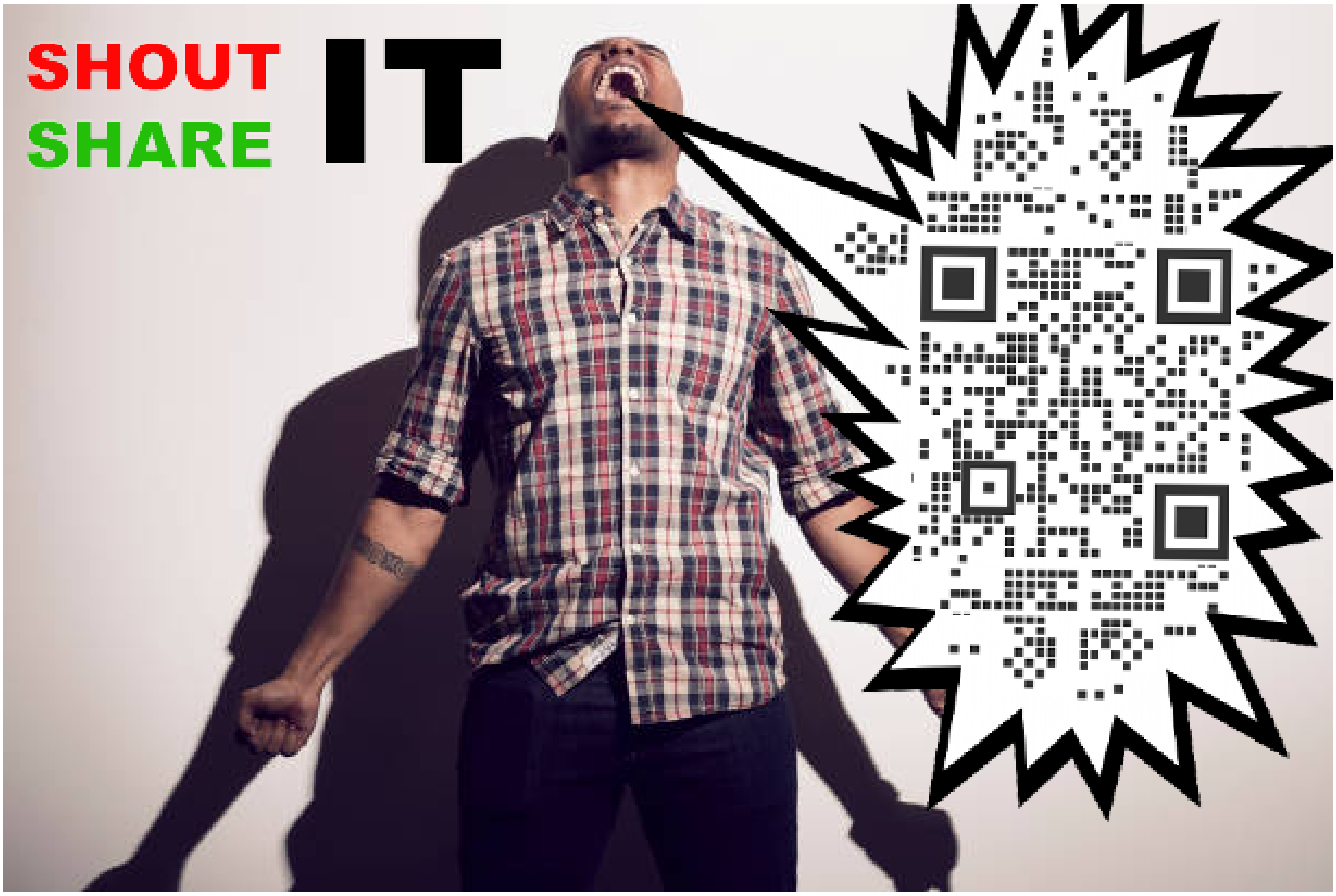
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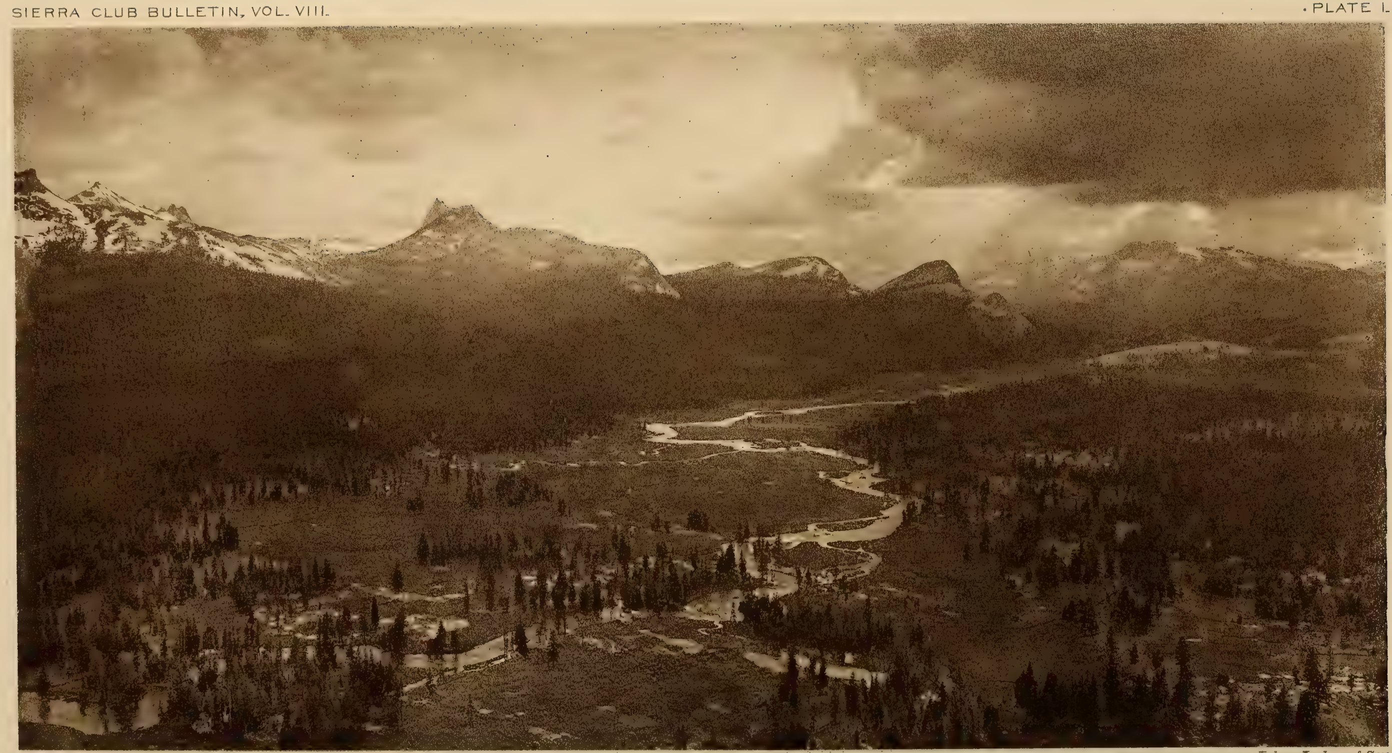

Photo. by Herbert W. Gleason

John Andrew & Son

TUOLUMNE MEADOWS, FROM LAMBERT'S DOME.

YOSEMITE NATIONAL PARK.

SIERRA CLUB BULLETIN

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CATHEDRAL PEAK AND THE TUOLUMNE MEADOWS.*

BY JOHN MUIR.

August 9, 1869.—I went ahead of the flock and crossed over the divide between the Merced and Tuolumne basins. . . . From the top of the divide and also from the Big Tuolumne Meadows the wonderful mountain called Cathedral Peak is in sight. It is a majestic temple of one stone, hewn from the living rock, and adorned with spires and pinnacles in regular cathedral style. I hope some time to climb to it to say my prayers and hear the stone sermons.

The Big Tuolumne Meadows are flowery lawns, lying along the South Fork of the Tuolumne River at a height of about 8500 to 9000 feet above the sea, partially separated by forests and bars of glaciated granite. Here the mountains seem to have been cleared away or set back so that wide open views may be had in every direction. The upper end of the series lies at the base of Mt. Lyell, the lower below the east end of the Hoffman Range, so the length must be about ten or twelve miles. They vary in width from a quarter of a mile to perhaps three quarters, and a good many branch meadows put out along the banks of the tributary streams. This is the most spacious and delightful high pleasure ground I have yet seen. The air is keen and bracing, yet warm during the day, and though lying high in the sky the surrounding mountains are so much higher one feels protected as if in a grand hall. Mts. Dana and Gibbs, massive red mountains perhaps 13,000 feet high or more, bound the view on the east, the Cathedral and Unicorn peaks with many nameless peaks on the south, the Hoffman Range on the

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*From Mr. Muir's journal, "My First Summer in the Sierra," to be published in the spring of 1911 by Houghton-Mifflin Company, Boston, with illustrations from original drawings by the author and photographs by Herbert W. Gleason. Portions of the journal will appear in the *Atlantic Monthly,* beginning with the January number.

west, and a number of peaks unnamed, as far as I know, on the north. One of these is much like the Cathedral. The grass of the meadows is mostly fine and silky, with exceedingly slender leaves, making a close sod above which the panicles of minute purple flowers seem to float in airy, misty lightness, while the sod is enriched with at least three species of gentian and as many or more of orthocarpus, potentilla, ivesia, solidago, pentstemon, with their gay colors,—purple, blue, yellow and red—all of which I may know better ere long. . . .

August 14th.—On the way back to our Tuolumne camp enjoyed the scenery if possible more than when it first came to view. Every feature already seems familiar as if I had lived here always. I never weary gazing at the wonderful Cathedral. It has more individual character than any other rock or mountain I ever saw, excepting perhaps the Yosemite South Dome. The forests, too, seem kindly familiar, and the lakes and meadows and glad singing streams. I should like to dwell with them forever. Here with bread and water I should be content. Even if not allowed to roam and climb, tethered to a stake or tree in some meadow or grove, I should be content forever. Bathed in such beauty, watching the expressions ever varying on the faces of the mountains, watching the stars, which here have a glory that the lowlander never dreams of, watching the circling seasons, listening to the songs of the waters and winds and birds, would be endless pleasure. And what glorious cloud-lands I would see, storms and calms, a new heaven and a new earth every day,—aye, and new inhabitants! And how many visitors I would have! I feel sure I would not have one dull moment. And why should this appear extravagant? It is only common sense, a sign of health,—genuine, natural, all-awake health. One would be at an endless Godful play, and what speeches and music and acting and scenery and lights,—sun, moon, stars, auroras! Creation just beginning, the morning stars "still singing together and all the sons of God shouting for joy!"

LITTLE STUDIES IN THE YOSEMITE VALLEY.

By Francois E. Matthes.

II. The Striped Rock Floor of the Little Yosemite Valley.*

About a stone's throw from where the Clouds Rest Trail leaves the flat of the Little Yosemite Valley, there is a curious expanse of smooth, bare granite, an acre or more in extent. It is a part of the solid rock floor of the valley, which, buried under river gravel and glacial material elsewhere, is here exposed to view, cleared of all debris. Indeed, so scrupulously clean swept does it look, one might fancy some cyclopian broom had been at work on it—and a new one at that.

Round about, in all directions lie glacial boulders, some singly, some in clusters, some in heaps mixed with fine debris. Sparse pines and cedars rise from what few cracks the stone floor affords as a root-hold, giving the place a singularly genial, parklike aspect. But the cleared tract itself has not a tree on it—its surface stretches unbroken and continuous, unmarred by a single fissure.

As one approaches from the lower end and looks up the gentle slope—for the floor inclines appreciably—the eye is almost at once held by the peculiar "painted" appearance of the space. Irregular, blotchy white ribbons set off conspicuously against the prevailingly gray tint of the rock floor, sprawl over it here and there. Wholly unlike the dark water stains that stripe most of the Yosemite cliffs, they seem, even to one thoroughly familiar with the various markings common to the rock surfaces of the region, altogether novel and enigmatic. All trend downward with the slope, but beyond this there seems no discoverable law in their arrangement, nor anything else immediately suggestive of their mode of origin. The majority occur in loosely connected groups, but some lie off by themselves, like pale islands in a dark ocean. As the view in Fig. 1 well shows, they generally commence abruptly and terminate abruptly, without definite relation to the unevennesses of the floor itself. Some divide, others merge downward; some gain in width, others taper down toward their lower ends.

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In dimensions they are equally varied. While they average between four and five feet in length and from two to three inches in breadth, there are individuals among them but a fraction of a foot long and others exceeding twelve or even fifteen feet; and some are less than an inch across, while others—like those in the immediate foreground of the view—span six inches and over. Nor is the breadth always proportionate to the length. Some of the longest are very narrow, some of the shortest very broad.

On closer inspection they are seen to consist simply of narrow tracts from which the lichens that otherwise uniformly mottle the rock have been removed, and it becomes plain that it is merely the light color of the unweathered granite thus exposed that makes them prominent. These stripes, then, are not stains at all; rather, they owe their brilliancy to their very stainlessness—to the absence of coloring matter of any sort.

By what agent the lichens were cleared off, however, seems at first a mystery. That it was some substance that moved downhill under the influence of gravity is patent from the invariable downhill trend of all the stripes, but what the nature of that substance was, is not easily guessed. One feels tempted to believe it was some corrosive fluid that was poured out upon the rock and flowed down slowly, eating away the lichens as it went. There are places in the Yosemite Valley where such a thing has actually happened, so the theory is not so utterly absurd as at first blush it may seem. On the road to Mirror Lake, for instance, there is a great block of granite on the flat side of which some enterprising individual once painted him an advertisement in bold, glaring type. The true history of the affair may be better known to some of the readers of this journal than to the writer, but he gathers from a casual look that the "ad" was subsequently effaced by a zealous guardian. Whatever material the latter employed to remove the paint, removed the lichens too, running down in vertical, blotchy stripes remarkably similar to those on the Little Yosemite floor. Again, at the site of the "Old Blacksmith Shop," near the foot of the Coulterville Road, a space has been cleared on a huge rock by means of some caustic, and the same streaky effect has been produced.

But the stripes in the Little Yosemite Valley clearly were not the work of marring man. Besides, the same sort of markings exist in many other places in the Yosemite region, in seldom frequented spots too, as a rule. It was on such a spot, in fact—on the north slope of Liberty Cap—that the writer first found a clue to their mode of origin. A small rock fragment, derived from a disintegrating shell of the great rock hump, had evidently slid here several feet from its place of starting, and, extending from it, pointing up the slope, was a little white path cleared of lichens. Not far away were other fragments each likewise leaving a flaming trail. The width of the stripe produced corresponded in each case to the dimensions of the fragment. A tiny bit of granite, no larger than a thimble, lay at the end of a delicate white ribbon, and an uptorn tree stump had made a dozen markings, one with each of its dragging root tips and a broad swath with its heavy broken end. Surely, here was the key to the enigma! Here were the stripes in process of being made.

What, however, impelled the rocks and the tree stump downward? None of them appeared in motion, and none when dislodged, would slip or roll. The slope was not steep enough for that. Observation further showed that no stripes ever occur on very steep slopes—they are restricted to surfaces of moderate inclination such as the crowning portions of the domes, and wherever the declivity approaches the "angle of repose" the stripes invariably come to an end. A pretty and striking instance was seen on a small domed spur in the Little Yosemite Valley. Here the stripes, diverging downward like meridians on a globe, all terminated abruptly as by concert at the same level, the same parallel of latitude. Below that line, evidently, the debris had slid or rolled away. The inclination here, it should be noted, was too great to stand on safely, but farther up, among the stripes, one could walk even with hobnails by exercising a little care.

It is to be inferred from the above that a slow motion of the debris is essential for the production of the stripes. The explanation is here offered that the debris is urged down little by little by snow and running water and even the rockgrains washing from above, in fact by all agents co-operating with gravity to overcome the frictional resistance of the floor. Most potent, no doubt, are the heavy snows of winter, and there is good reason to believe that the greatest progress is made under their influence. For, on inclined surfaces of this sort, snow does not lie wholly inert, but almost imperceptibly creeps downward—the same as it does on the roofs of barns and sheds. As the entire layer advances, it naturally tends to drag the debris with it.

The total progress thus effected may not exceed an inch or two per year, and this estimate, if it is at all correct, lends additional significance to the stripes: they indicate not merely the route traveled over by

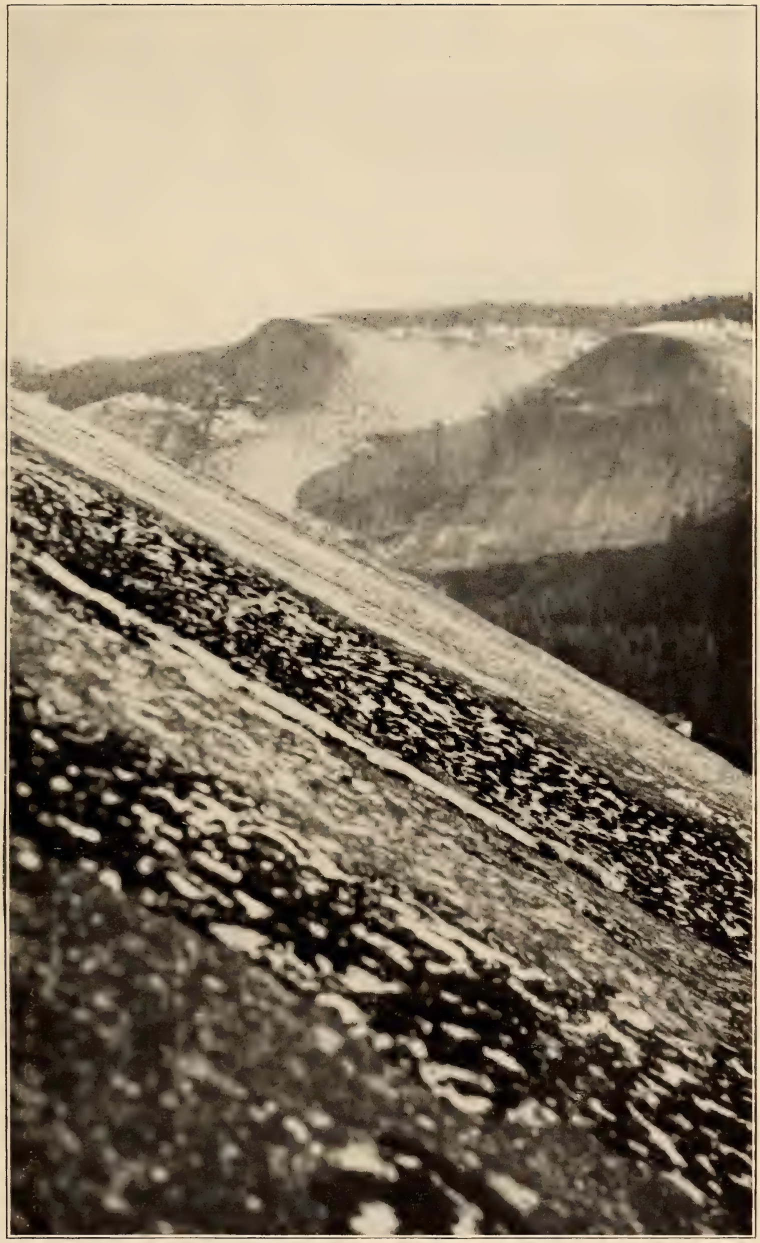


FIG. 2. YOSEMITE VALLEY STUDIES.

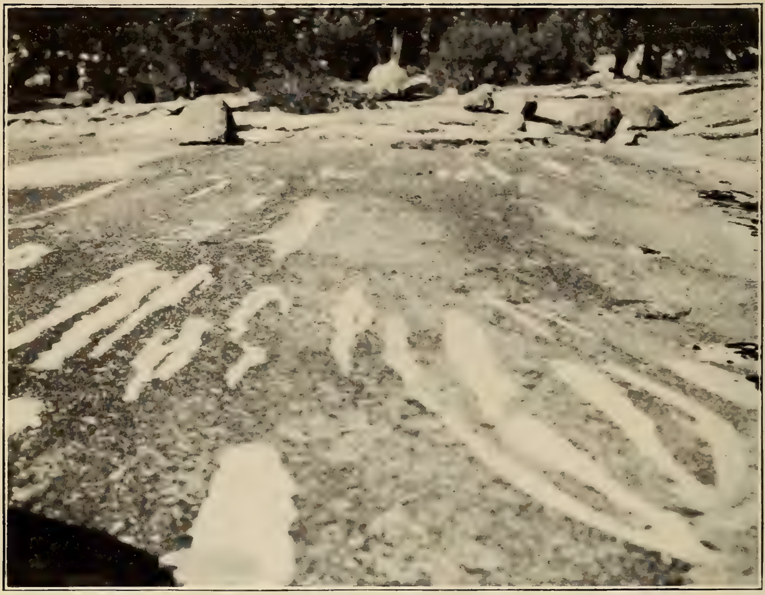


FIG. I. YOSEMITE VALLEY STUDIES.

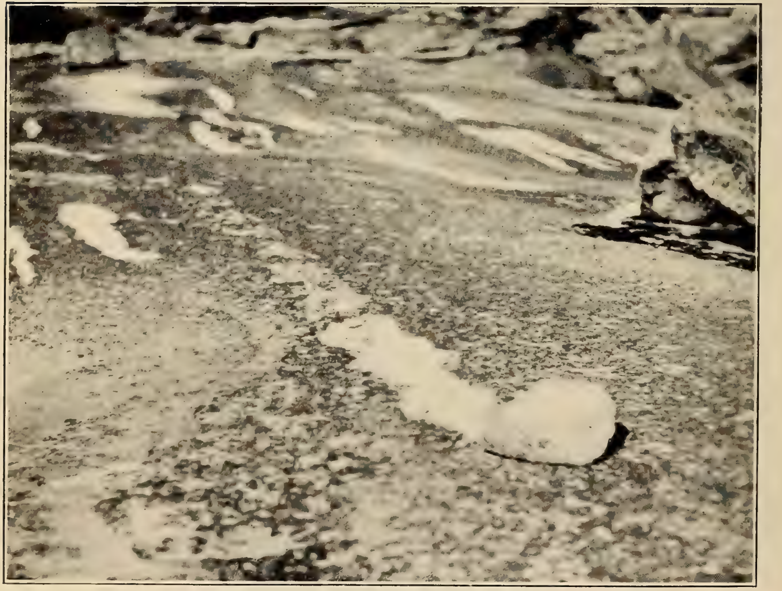


FIG. 3. YOSEMITE VALLEY STUDIES.

each fragment, they also embody a time record of the journey. Some of them represent a lapse of many years, the more impressive when it is reflected that during all that time no being, human or other, happened by in this solitude to interfere with the orderly continuance of the process.

The above explantion, however, accounts only for the movement of the debris. It does not yet make clear the production of the stripes themselves. That a heavy boulder might grind off the lichens from the bed it passes over seems quite natural, but that a bit of rock weighing an ounce or two should clear a path does not seem at all self-evident. The weight of the fragment, if it is a factor in the process, apparently plays but a minor role.

On picking up one of these traveling fragments, one finds it invariably imbedded in a small pad of loose rock grains that have collected under it. Now lichens cannot thrive under the thinnest veneer of sand or soil, as may be observed in a thousand places throughout the Sierra. Slanting rocks uncovered by the grading of a wagon road, for instance, show plainly by the boundary of their lichen growth where the surface of the ground used to be. Shallow basins in a rock floor or on large boulders that tend to accumulate sand, pine needles, and other litter, similarly remain white and bare of lichens. It is safe to say, therefore, that it is the sand pad under the fragments rather than the fragments themselves that clears the lichens from the stripes. And here, again, is substantiation of the view expressed regarding the slowness of the process. For, were the movement at all rapid, the lichens in any one spot would not remain covered for a sufficient length of time to utterly die and loose their hold. As a matter of fact there are places where they were not entirely stamped out and the stripes appear dim or interrupted. The debris must have advanced here with more than usual rapidity, owing to some local acceleration of the gradient, or perhaps through the pressure of an exceptionally heavy snow fall.

To come back now to the floor of the Little Yosemite Valley equipped with this insight into the stripe-producing process, let us look it over somewhat more closely. The feature that strikes us as most puzzling is the total absence of debris of any kind. Whatever material once traveled over the floor has in some manner disappeared. But not wholly, for here, near the east edge of the tract, lies a boulder weighing some twelve or fifteen pounds (see Fig. 3) at the end of a long and glorious stripe. More than twenty feet it stretches, gradually fading in the distance like the smoke trail of a locomotive. A finer example would be difficult to find. The upward dimming of the stripe is in itself significant: so excessively slow has the progress of the boulder been that the lichens are already beginning to encroach again on the upper end, slow-growing plants though they be. When it is considered that rocks uncovered by road grading a score of years ago show scarcely any new lichens to-day, the great span of time represented by this stripe becomes doubly impressive. Its upper end, indeed, may date back to the time the Yosemite Valley was discovered.

But this stripe, after all, differs somewhat from the others on the floor. The rank and file are shorter and narrower; many split or fork irregularly, and all have ceased to grow in length through the removal of the debris that made them. Yet that material did not roll away, for the floor maintains about the same grade throughout and many stripes begin in the same latitude where others end. How, then, are these traits to be interpreted?

In the first place it seems certain that the material in question consisted of small, light fragments that were easily disturbed and thrown from their path by the feet of passing men or animals. That this must have happened more than once seems likely in view of the fact that the Little Yosemite is much frequented and in former days was inhabited by Indians, as the round holes in which they ground their acorns, near by, amply attest.

Again, the assumption seems legitimate that the fragments were in an advanced state of disintegration, and broke down and crumbled on the way. Much of the debris that litters the valley floor to-day is in just such a crumbly state. It has lain exposed so long to strong diurnal and seasonal temperature changes that the individual crystals in the granite, each expanding and contracting with a coefficient of expansion peculiar to the mineral composing it—feldspar, quartz, mica or hornblende,—have gradually worked loose and are ready to part company. Those readers who have mountaineered in the Sierras may have had the experience of picking up a rock that would break in the hand and run like sand through the fingers. This suggests an explanation for the forking of the stripes. A decomposing fragment, after having advanced some distance, would break in two. From then on there would be a double trail. Later, each of the pieces would divide, and the trail would split again. Some fragments broke down by degrees into an aggregate of half-loose crystals, and their trails widened out progressively. The end in each case came no doubt, when there was nothing left but a little heap of rock grains which the melting waters of springtime carried off with a rush.

There are several other features of the striped rock floor of the Little Yosemite Valley that demand elucidation, and it is the writer's hope that this article may cause them to receive attention during the excursion planned for the coming summer.

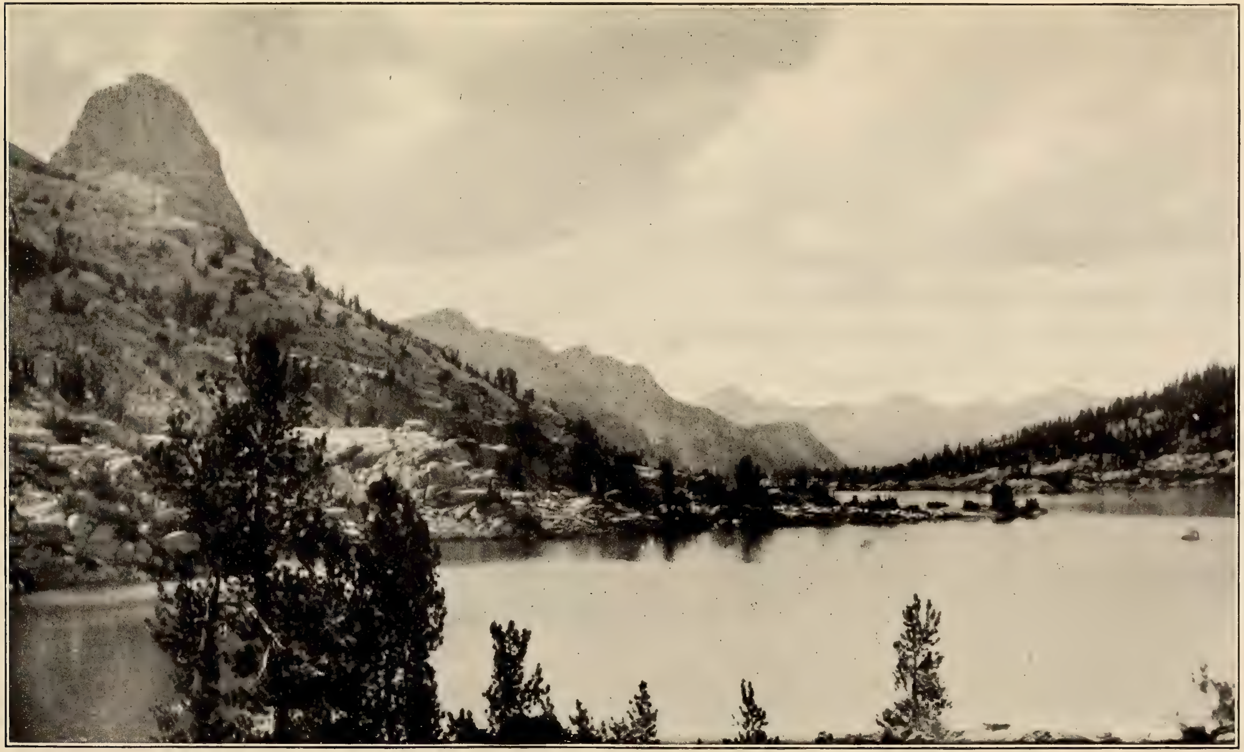
THE KINGS RIVER OUTING OF 1910.

By R. L. Glisan.

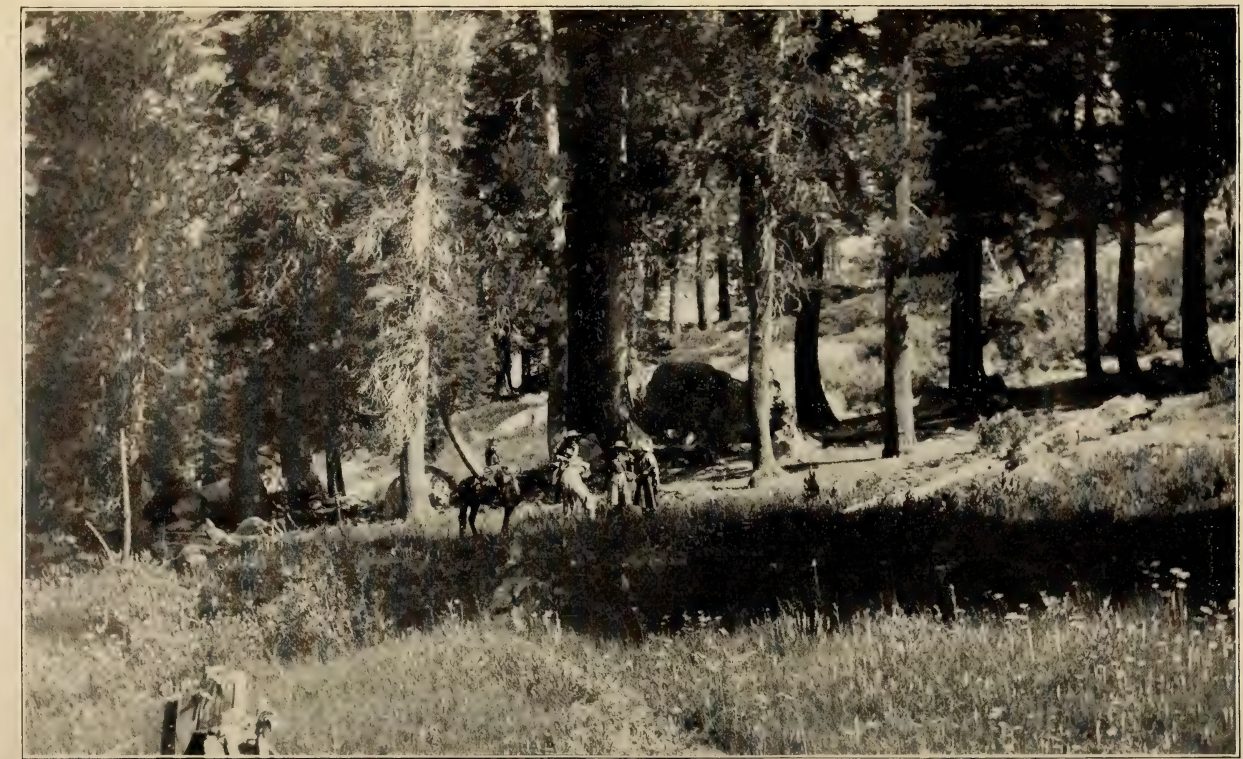
The Yosemite National Park Outing of 1909 proved so interesting and enjoyable that I was anxious to visit the Kings River region to the south, and thus secure the cream of the Sierra scenery.

On the afternoon of Wednesday, June 30, 1910, the San Francisco party took Pullman sleepers for Lemon Cove, the end of rail communication. The train came to a most impressive stop some time after midnight, and half awake, tumbling into tramping costume, we ventured out where dim figures lurking in deep shadows suggested a possible holdup.

A familiar voice from the gloom directed my attention to a four-horse stage and, as I scrambled up, the impatient horses plunged forward. It was a weird ride as we drove through the night in the direction of the Star in the East, groves and fields were barely distinguishable as we passed, and soon we took the grade winding up the cool cañon, the horses straining at the collar as though they knew what was in store for them if once the sun came out with its relentless rays. Before the day was over we realized the wisdom of an early start. A few clever suggestions as to short cuts from the driver, emphasized by the pathetic condition of the steeds, persuaded many to walk ahead, and before noon we reached Juanita Ranch, at the head of a small valley, where, fanned by a delightful breeze under wide-spreading oaks, we watched the stages come toiling in. This was the largest invading army the natives had ever seen, with more to follow, for the Los Angeles contingent were held back for several days, the stages and pack-trains being inadequate to take care of all at once.



LOOKING DOWN RAE LAKE, 1910.
Photograph by E. T. Parsons.



FLOWERY GLADES ON BUBBS CREEK TRAIL, 1910.
Photograph by M. V. Tenney.

After a refreshing wash and lunch, we again attempted the grade through the scattering oaks and on up until we approached a few giant sentinels and entered a grove of massive sequoia, interspersed further on with lofty sugar pine. No fenced-in tree trunks bearing borrowed names and placards grossly advertising their size, but a forest of giants primeval, secluded and undisturbed. It was a fitting close for the long day as we silently passed through the forest, awed by their massive splendor, thrown into sharp relief by the sweeping glance of the slowly receding sun.

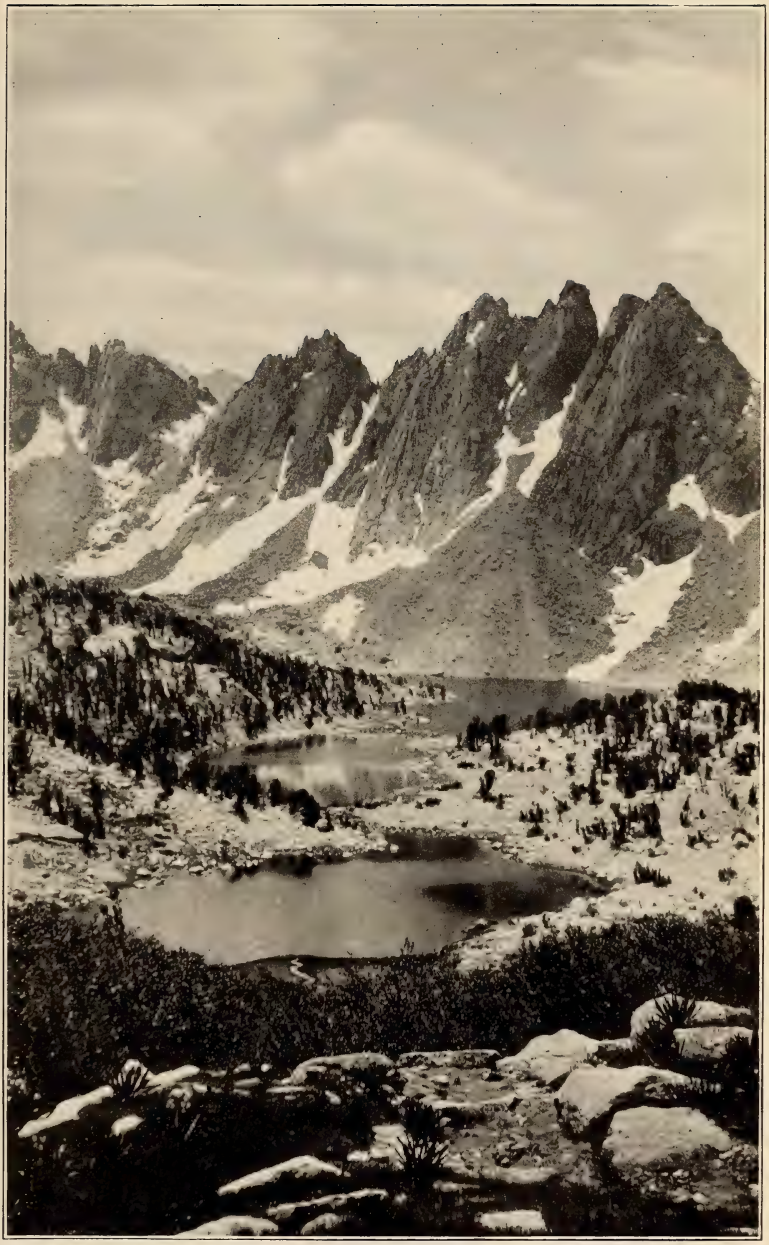
Towards evening we reached Quail Flat, where the mountain ridge thrusts its shoulder out of the forest some 7,000 feet above the sea. The crisp air made us scan with more than idle curiosity the heap of accumulated dunnage bags in search of familiar initials. Our sleeping-bags unrolled, the evening meal and fire drew us like a magnet, many envious glances being cast at the wholesome array sacrificed to appease a mountain appetite, and hardly offered before it vanished like magic in our midst.

We slept a dreamless sleep—save those who lay in the way of our foraging, long-eared, four-footed comrades, who made the owner of one Merry Widow straw hat sleepless for fear it would be included in their bill of fare. Perhaps it was, for the hat, unlike the Bostonian's white collar, was never seen again. We awakened as dawn appeared to blaze the trail to the eastward. With fear and trepidation we dragged our bags down to the scales of justice with that dread experienced by some at the approach of the census taker, lest the fact develop that they are on the shady side of forty. The question of the hour was not "How old was Ann?" but "Are you over forty?" Insult a Sierra maiden with such a question and she would laughingly confess to being over forty the day before, but now hardly thirty-eight, and unless too much stress be placed on the rejuvenating atmosphere, would add that a hero had volunteered to carry a box of candy or cookies on a prospective percentage basis of compensation. For let it be known that such edibles are never wilfully forsaken, however drastic the hard-hearted committee may be on weight limitation.

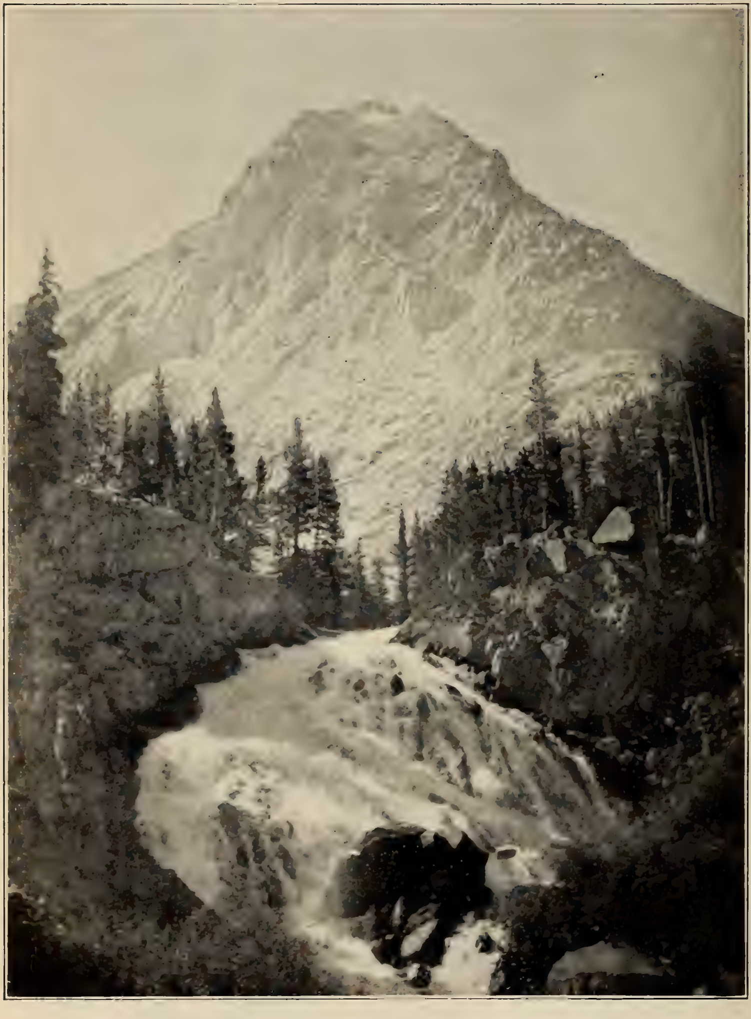
Leaving Quail Flat armed with maps and detailed instructions as to the route, we were soon strung along the trail in small groups. Woodcock and Rabbit meadows, small mountain glades in the timber were passed, then across Big Meadows, along Meadow Creek into the forest again, and down to Boulder Creek for lunch and a refreshing bath in the clear willow-fringed pools. In fact, hardly a day passed during the Outing without favorable opportunity and most attractive places in which to bathe or swim to one's heart's content, certainly one of the most grateful features of a most enjoyable trip.

From Boulder Creek the trail zigzagged up the opposite cañon slope more than 1,000 feet, winding through pungent bear clover, under red fir and tamarack pine, and mid-afternoon found us at Horse Corral, camp being established on the edge of the meadow near the stream in a cluster of Jeffrey pines. We were considerably higher than Quail Flat and the night proved the coolest experienced on the trip. The temperature dropped to freezing and the stream in the early morning made one fairly ache in bathing.

An early start soon brought us to Summit Meadows, where we climbed Lookout Peak and had a comprehensive view of Kings River 4,000 feet below, with the cañon in a bluish haze, merging into the mountainous region beyond. Going down we followed the old trail through a grove of sugar-pine to the river, crossed on a narrow bridge and went leisurely up-stream, selecting a place for lunch on the bank close to the rushing water. Several hours later we reached the place selected for the main camp at the base of the Grand Sentinel, near the junction of Copper Creek with Kings River, in a grove of large yellow pine. Kanawyer, our head packer, had his cabin, store and post-office combined on the other side



KEARSARGE LAKES AND PINNACLES, 1910.
Photograph by Edward Gray.



EAST VIDETTE AND FALLS FROM SIERRA CLUB CAMP, 1910.
Photograph by H. E. Bailey.

of Copper Creek, the only inhabitant of the Kings River region. Fishing and walks to Roaring River Falls and other places were the special attractions for several days. To reach the falls we crossed Kings River near camp on a log left conveniently wedged in place by the winter freshet, and picked our way over a talus of huge granite blocks, squared and ready for the corner-stones of great cathedrals; traveled through groves of yellow and sugar-pines, one stately sugar-pine measuring twenty-five feet in circumference; crossed an open meadow affording a comprehensive view either way of the cañon walls in the shifting shadows and the Grand Sentinel towering above; and keeping close again to the roaring water, we passed through scattering pines to the place where Roaring River leaps out of a gap in the cañon wall and drops into a rocky basin below with a roar that is a credit to its name.

The day after the Los Angeles party arrived, making the total number in camp nearly one hundred and eighty, the main camp was deserted by all save the less strenuous. We took the trail up Kings River to Bubbs Creek and up the creek, stopping for lunch at the head of the falls, where we had an unobstructed view down the cañon and beyond. For this beautiful stream to be branded with such a name is surely a crime. Let us hope it is only an abbreviated name for the snowy bubbles it makes in its reckless plunge from Center Basin to the Kings Cañon. Our camp, at an elevation of 9,500 feet, was admirably placed in a bewildering array of Nature's masterpieces. We were near the willow-fringed stream in a grove of tamarack and white-bark pine at the base of the East Vidette, a prominent peak which caught the evening light at times with such a vivid hue it seemed fairly ablaze. Opposite the Videttes the Kearsarge Pinnacles cut the sky with fantastic spires and jagged shapes. Falls were below us and a fall above us, and what a fall it was!

Next morning found us on our way to Bullfrog Lake on the bench above. The lake's chief claim is its massive setting. Rixford and Gould, ascended by some of the party, rise from the further side, while near by the Kearsarge Pinnacles form a giant stairway to University Peak beyond.

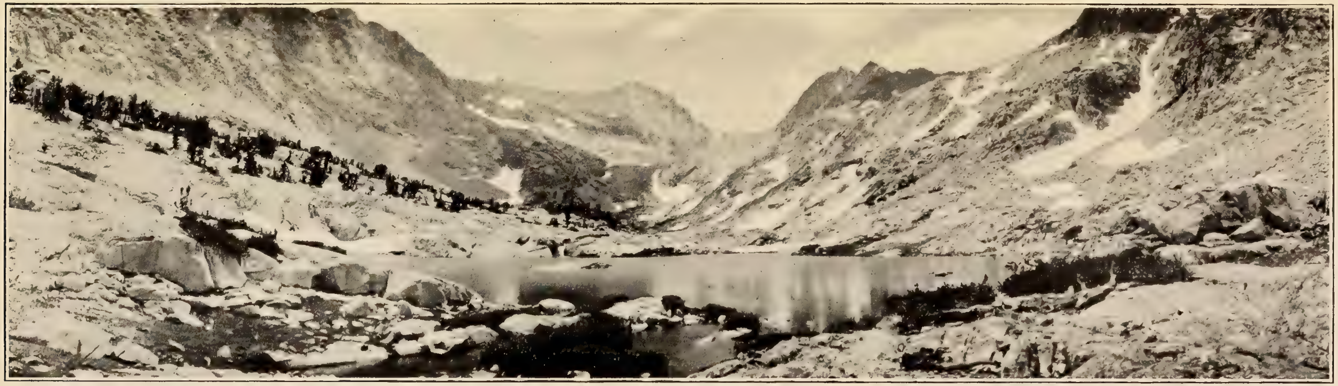
Impatient and less clever than our leader, failing to land trout at Bullfrog, we kept on to Charlotte Lake, equally attractive, and soon had a fair string of trout, a threatening thunder-storm warning us against further delay.

Early the day following a fair-sized company left camp and two hours' walk brought us to Center Basin, where Center Peak apparently rises out of a perfect amphitheater, and after several hours' stiff climbing the summit of University Peak was made, 13,588 feet elevation. An hour slipped by as we revelled in the view, a most attractive combination of mountain and desert. On the plains below we saw a narrow thread, where the life-giving fluid would soon start on its long journey to supply Los Angeles's thirst. The elements were in a fitful mood. Over the mountains in front driving sheets of rain came down from the leaden sky; clouds pouring through the gap were laden with snow, and surrounded by snow we were pelted now and then by hail-stones, while the lakes below looked like silver sheen or inky cauldrons, as the struggling sun would strike or miss them.

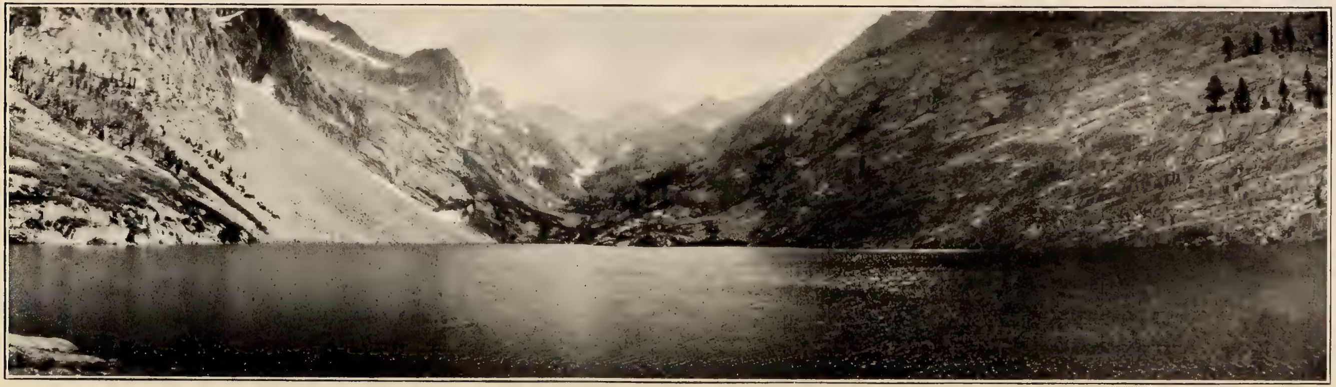
Descending, we followed the Kearsarge Pinnacles, rewarded by a glorious slide down a lengthy snow slope, and then by the Kearsarge lakes down to Bullfrog and home again, for where our sleeping-bags lie is home.

The trip to the Vidette lakes made another day to linger in one's memory.

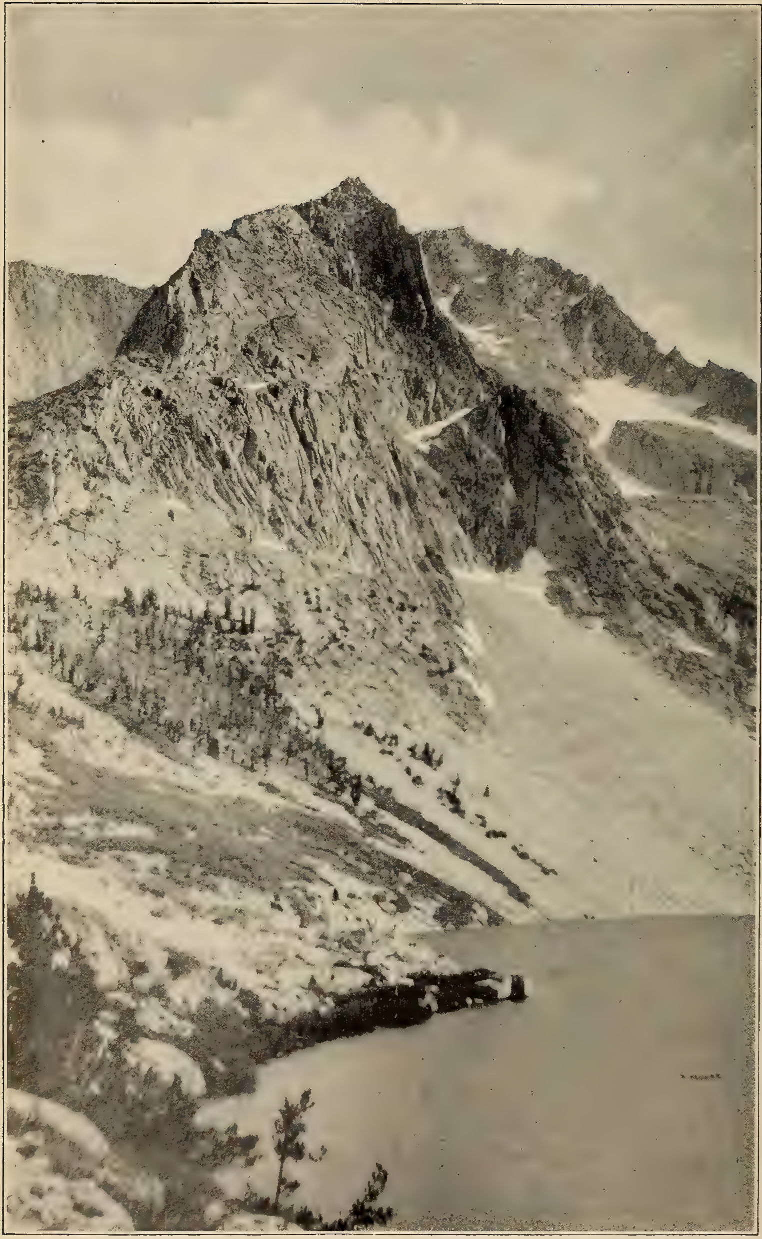
Following up the small creek through scattered foxtail pine, whose reddish bark with dark polished limbs of orange tint offered striking contrast with the green foliage and rocks of quiet shades of gray. A chain of lakes was passed, one above the other, until we climbed into the upper basin at the base of Deerhorn Mountain. Here we allowed several hours to go, watching the white



VIDETTE LAKE, 1910.



REFLECTION LAKE, 1910.
Photographs by W. P. Boland.



KINGS-KERN DIVIDE FROM REFLECTION LAKE, 1910.
Photograph by P. S. Bernays.

clouds drive over the pass, a Clark's crow impudently staring at the intruders from a stunted pine, while humming-birds darted over the heather unable to choose between their dainty bloom and the flowers in the ferns and willows below.

The following morning my comrade and I left camp ahead of the others and retraced our way down Bubbs Creek and followed up East Creek in the shade of huge red fir, through willow thickets, where bear had broken their way, over talus slopes where marmots whistled, across moss-covered patches where delicate ferns sought moisture, grassy slopes where yellow, red, and blue flowers bloomed and robins called, glades with wild gooseberry where startled grouse mothers warned their fluffy offspring, wise beyond their years.

Passing East Lake and on to Reflection Lake, for the day was young, we passed over an area of uprooted pines, piled like jack-straws by the winter's avalanche. Forcing our way through thickets, over glacier-rubbed slopes, we were rewarded by a view of the lake, a mirror of deepest blue reflecting the precipitous encircling slopes, a wild duck rising as we echoed our delight in viewing such a gem.

Returning to East Lake, we found camp selected at the upper end, where cedar and yellow pine reached to the water's edge.

In the gray dawn of the morning we climbed Mt. Brewer, up rocky slopes, keeping on one rock-covered shoulder until it met the jagged sky-line and then up the mountainous backbone, where the vertebræ were all too prominent, and finally 13,577 feet above the sea we crowded together on the summit, our feet dangling over eternity, monarchs of all we surveyed, the most exalted of mortals on earth for the time being.

Among the peaks around us on the horizon, Whitney, the goal of another climbing party, and many other peaks were pointed out by our leaders, and to the south we could see where the High Sierra divided.

Returning down the sky-line, we kept to the snow, fair sliding where steep, but full of pot-holes with wind-carved knife-edges on the level. Stopping for a plunge in East Lake, we pushed on to Bubbs Creek below East Creek Junction, where camp had shifted, and made up lost sleep on a bed of chinquapin leaves beneath red firs.

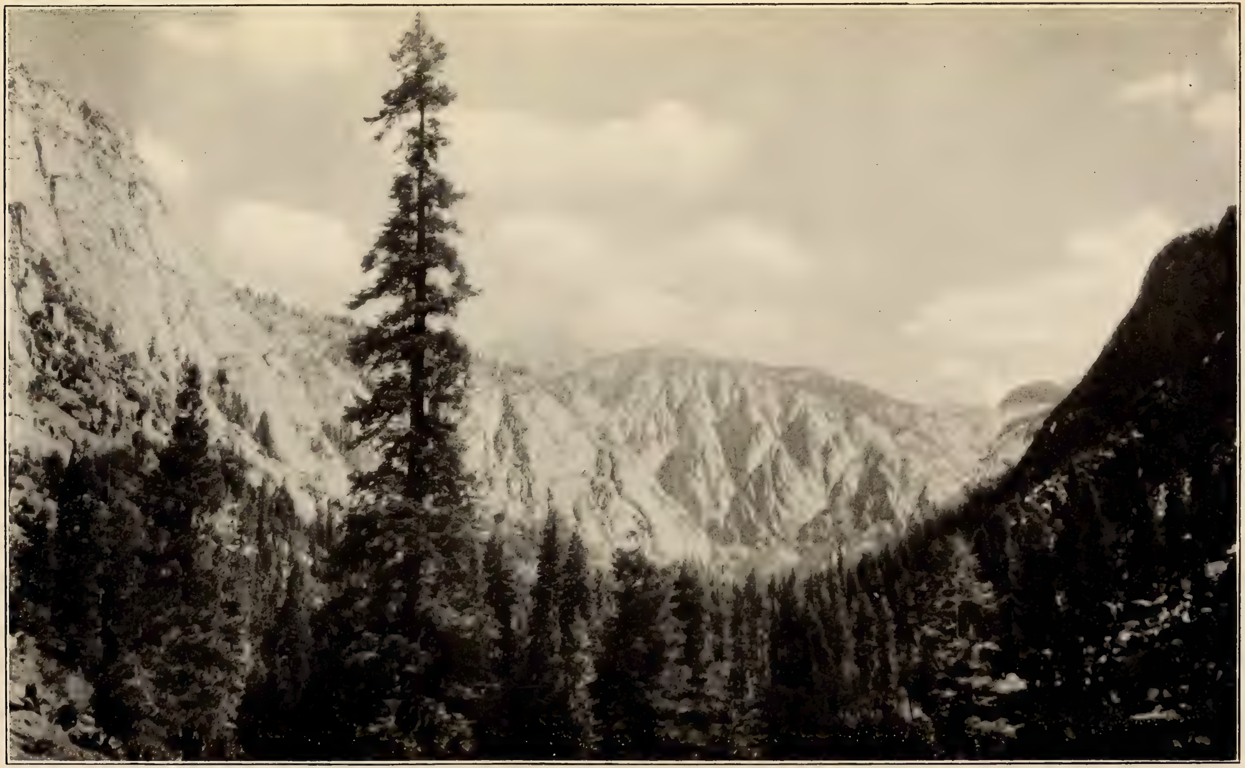
How the Outing Committee managed to repeatedly shift camp to accommodate our restless natures will always be a mystery, especially to the members of other clubs who know a few of the difficulties to be overcome.

Returned next day to main camp at Copper Creek. We rested a day, and then started up Kings River again, keeping on the left bank. Where Bubbs Creek came in from the east we went north up South Paradise Valley Fork of Kings River, stopping to photograph Mist Falls, where the river takes a long slide, then leaps out of a groove and drops in a rainbow misty sheet of white into a deep pool below, a hot zigzag over huge granite talus and a walk through a shady forest of white fir, cedar, sugar- and yellow pine, brought us to junction of Woods Creek.

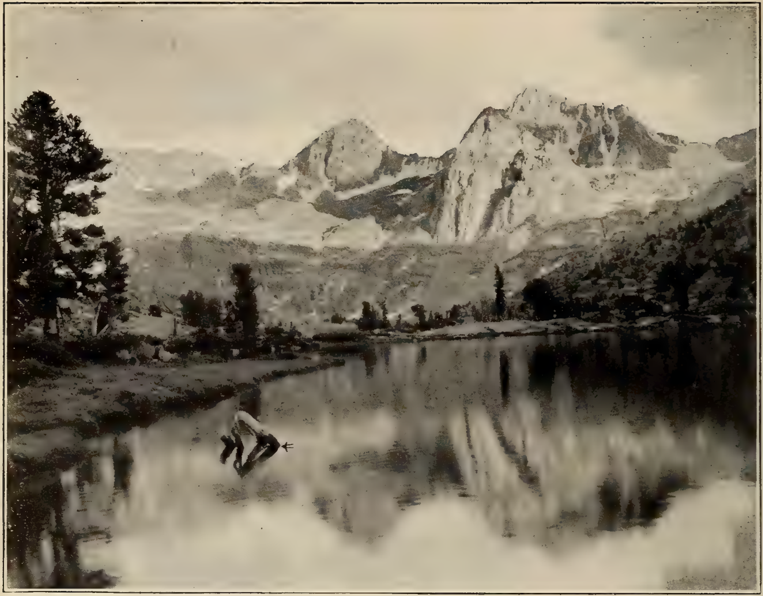
Leaving camp the day following, we explored Muro Blanco Cañon, struggling through a tangled mass of chinquapin, willow, wild currant, gooseberry, and cherry, through scattering yellow pine, red fir, and juniper, taking refuge under some huge granite blocks as a thunderstorm swept through the cañon. This proved the forerunner of a series of storms which kept us in camp next day and drenched the party who had come over Glenn Pass from Bullfrog Lake to Rae Lake and down to camp.

The storm clearing somewhat, we took the trail up Woods Creek to South Fork and up that stream to the Rae Lake Basin. Crossing on a log over South Fork, one of the party fell in and was rescued by the alert financier from Texas, who plunged to her aid and thus averted a panic on the neighboring banks.

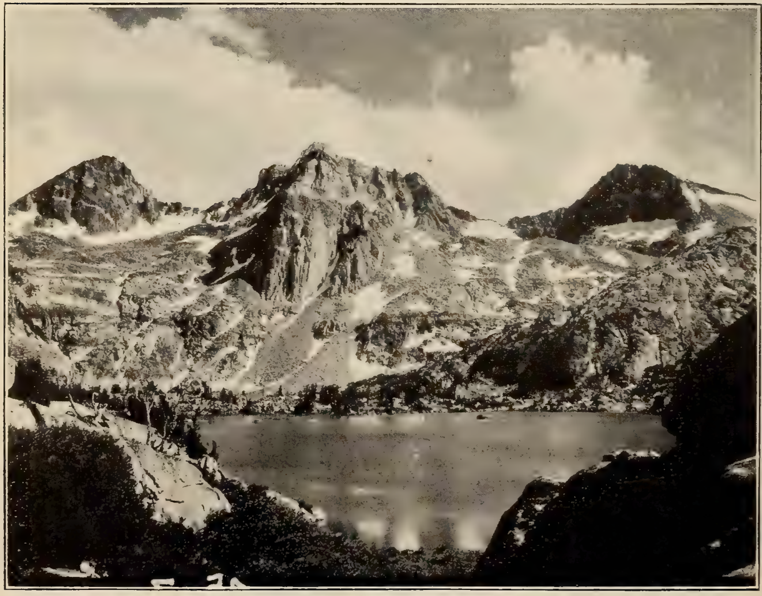
No one could ever hope to describe the beauty of the Rae Lake basin. The evening reflection in the lake, the



LOOKING UP PARADISE VALLEY, 1910.
Photograph by C. C. Clarke.



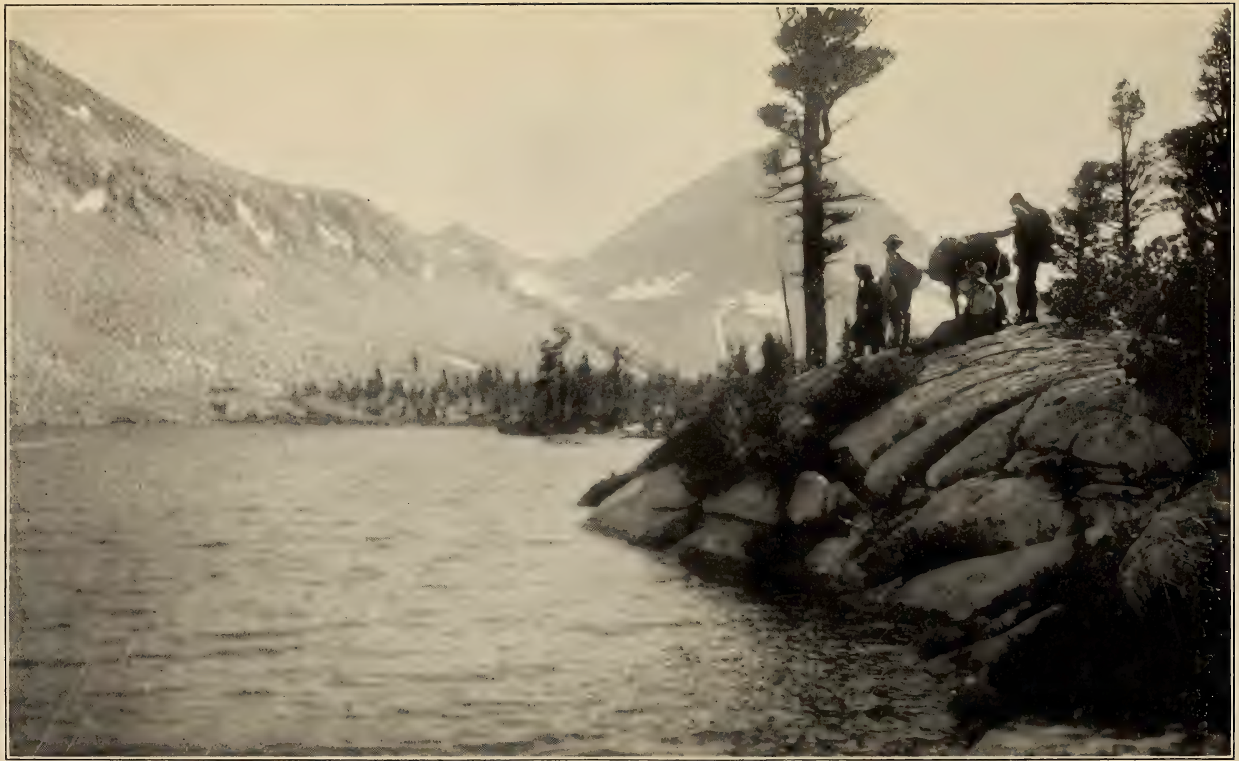
RAE LAKE FROM SIERRA CLUB CAMPSITE, 1910.
Photograph by C. H. Hamilton.



MT. RIXFORD FROM ACROSS RAE LAKE, 1910.
Photograph by C. W. Pohlman.

SUNRISE REFLECTIONS IN RAE LAKE, 1910.
Photograph by H. E. Bailey.

ISLANDS IN RAE LAKE, 1910.
Photograph by Mabel Sykes.



ARROW PEAK FROM BENCH LAKE, 1910.
Photograph by R. L. Glisan.

moon coming over the crest of Rixford and Gould, the quiet serenity of the lake, the massive majesty of the snow-capped peaks, Fin Dome in the cold gray of an early morning, taking on the warmer tints of dawn, and later every crag and rock brought out by the searching sunlight in microscopic detail in that thunder-cleared air.

The elevation of the lake was over 10,000 feet. Each and all seemed possessed with a feeling of indescribable buoyancy. Some of the difficult peaks were climbed by select parties, and nearly every one climbed the ridge and looked down into the Sixty Lake basin. A few trout planted several years ago had increased in such numbers and size as to keep the camp almost surfeited with fish. Bathing was ideal, everything was perfect. One pitchy log burned steadily for three nights, a self-perpetuating camp-fire. Reluctantly leaving the lake, one of the Outing Committee was hypnotized into guiding a party of seven of us on a five-day knapsack trip up Woods Creek, over the pass at Mt. Pinchot, down to Bench Lake in the upper basin of the Kings, up the other side, across another pass to the head of Cartridge Creek, down the creek past Marion Lake, by Triple Falls to the Simpson Meadows, up from the meadows, rich with horse feed, over the cañon wall, across Granite Pass and down Copper Creek, just in time to join the procession homeward—a side-trip compared to which main trips elsewhere would appear hopelessly uninteresting.

On the way back to Lemon Cove, opportunity was offered and taken for a side-trip into the heart of the Sequoia Forest in Redwood Cañon below Quail Flat. At Lemon Cove we saw charming orchards, which had been hidden in the gloom the night we started.

Take the trip, and you will see the difficulty of the task I have assumed in describing its attractiveness.

A VACATION TRIP TO MOUNT KINABALU IN BRITISH NORTH BORNEO.

F. W. Foxworthy.

Kinabalu is the highest mountain in the whole Malay region. It occupies a very commanding position in the northern part of the island and can be seen from the sea on three sides—the north, the east, and the west. Latitude, about 6° north; longitude, between 116° and 117° east.

It has been climbed a number of times since the first trip of Sir Hugh Low in 1852. The great size, comparative isolation, and non-volcanic nature of the mountain give it peculiar interest in the part of the world where mountains of volcanic origin are common. The natives living in the country about the mountain have a sort of superstitious veneration for it. The Dusuns regard the top of the mountain as their heaven, the place where good Dusuns go when they die. Bad Dusuns are also supposed to try to reach the place; but their spirits are unsuccessful in reaching the top, being pushed over some of the huge precipices on the way up, falling to the bottom and having to begin the climb all over again, this process being continued indefinitely.

This peculiar regard for Mount Kinabalu has made the natives reluctant to climb the mountain and has been responsible for most of the difficulties encountered by those who have attempted the ascent. The natives have frequently declined to go, and, without their aid as carriers, the trip is impracticable.

In February of this year, 1910, Miss Gibbs, a botanist from the British Museum, made a very successful trip to the top. She treated her coolies so well that I found them eager to make the trip again when I arrived at Kiau a month later.

My trip was purely a vacation ramble, and its course

SUMMIT OF MT. KINABALU.

BREAKFAST AT PAKA CAMP, MARCH 20, 1910.

CAMPSITE AT KAMBURANGAH, MARCH 20, 1910.

was as follows: Leaving Manila in the latter part of February by a Spanish boat, the "Garcia Pitogo," the first four days were occupied with a trip to Puerto Princesa, Palawan; then two days in the small customs cutter "Sora" to Kudat, Borneo; and then about ten hours by the North German Lloyd S. S. "Marudu" to Jesselton, where I presented my letter to the Governor and obtained permission to make the mountain trip. On March 10th the Governor very kindly placed the G. S. Y. "Petrel" at my disposal to take me and my outfit from Jesselton to Usukan Bay. From Usukan Bay it was a walk of but seven miles, over an excellent bridle path, to Kotabelud, the real starting-point for the trip. Mr. D. R. Maxwell, the out-station officer at Kotabelud, made all the arrangements for the journey, and it is to his skillful management and to the confidence which the natives had in him that the success of the trip is due.

Kotabelud occupies a commanding position overlooking the lower valley of the Tampassuk River. There was a day or two of delay here to assemble the coolies who were to take my outfit to the base of the mountain, thirty-four miles distant. On the morning of March 13th we started the coolies about 8 A. M., and followed them on ponies a few hours later. The bridle path wound in and out along the bases of the hills overlooking the valley of the Tampassuk. It was a very pretty but a scantily populated country through which we were passing. Late in the afternoon we arrived at Kabaya, where the government maintains a shelter house. It had been raining steadily for an hour or so, and the shelter was a welcome sight to white men and natives alike. We made about fourteen miles that day.

March 14th.—As there were rough spots in the path ahead, the ponies were sent back this morning and we proceeded on foot. The country was becoming much rougher, the ridges higher, and the scenery much finer. The path led in a southerly direction, bending to the southwest and west where the valley of the Tampassuk rounds the western end of the mountain. Its summit was in sight during nearly the whole day, and was viewed from various angles. The western or Maripari spur was particularly in evidence. About noon the path descended to the river at Kaung (about 1,000 feet A. T.), and then ascended steadily on the west side of the ridge to Kiau, which was reached about 3:30 P. M., some of the coolies not coming in till several hours later. All the way from Kaung up to Kiau we were pelted with a steady, cold rain. The government has another of its useful shelters at Kiau, and we were very glad to get in out of the cold and wet.

This place is about 3,000 feet A. T. It is scattered about on the exceedingly steep hillsides, and the Dusuns have a number of very well kept gardens, where they cultivate taro, rice, etc., on ground so steep that it is difficult to stand on it. The town is located in a small cocoanut grove, and there is also a fair supply of oranges and of the betel nut palm. There is also a very fine large pomelo tree, which was planted here by Sir Hugh Low on one of his trips a half century ago. The fruit is valued to some extent by the natives; but they have never taken the trouble to plant additional trees. These Dusuns are not a particularly ambitious lot, but they certainly do some very hard work in the care of their field crops. They are fond of various kinds of small game and do considerable trapping of rats, which they eat very eagerly.

From Kiau point our coolies returned to the lowland, some of them not even resting over night before starting.

March 15th.—This morning a good many of the men of the village came in to see us. Mr. Maxwell asked for volunteers to accompany me on my trip and about thirty men were eager to go. Since I needed only ten to take care of my outfit, it was possible to exercise some choice, and Mr. Maxwell picked out a very excellent set of carriers for me. In previous ascents of Kinabalu it was deemed necessary, in accordance with local tradition, to take three guides, or old men, whose duty was to say the necessary prayers to propitiate the spirit of the mountain. After a lengthy conference Mr. Maxwell succeeded in persuading them that I could get along with only two old men to say the prayers. This was quite an advantage, as each of these priests expects a good deal more pay than the average carrier and does not carry a load. The whole of this day was spent by Mr. Maxwell in arranging the details of the trip and in dividing up the rice, fish, cigarettes, blankets, etc., so that each man would have his proper share. It is hard for one unacquainted with the brown races to appreciate the difficulty of negotiating with a primitive people and the patience required in arranging such a trip as this. A number of the previous expeditions to Kinabalu failed at just this point; but, thanks to Mr. Maxwell's splendid management, this was handled with the least possible delay, and the natives were satisfied. Heavy rain fell from 9 A. M. on for the rest of the day. The evening was clear.

March 16th.—This morning at 7:15 o'clock I took leave of Mr. Maxwell and started out on the mountain trip proper. The trail led up and down through taro fields and was difficult going for an hour or two till we struck the bed of the Kadamayan River, which is a branch of the Tampassuk and is here a mountain torrent. We followed up the bed of the stream, now wading against the current, now clambering over boulders, for about an hour and a half, when we were able to get a steep trail by which we could climb up the forest-covered side of the gorge. About noon we arrived at Lobang, alongside the stream again and at the foot of a high fall. We were able to make camp under an overhanging boulder a few minutes before the rain began. This place was determined upon as our camp-site because it was one of the points at which some of the necessary prayers had to be said, and the prayer must be said at night. The altitude of this place is about 5,000 feet A. T. The afternoon (2 P. M.) temperature was 62° and the temperature at 6 o'clock next morning about 60°.

March 17th.—This morning was fair. We started out about 8 A. M., crossing the stream and struck some good, hard climbing in the forest that covered the other side of the gorge. After two and one-half hours we crested the ridge and made camp at about 7,800 feet A. T. in the mossy forest. We found some of the remains of Miss Gibbs's camp and utilized them in building a shelter for ourselves. We were able to get a fairly good shelter constructed and a fire started before the rain commenced. A steady, cold rain fell all afternoon, but the night was clear. The temperature inside the shelter at 6 A. M. was 54°.

The camp-site was surrounded by a dense growth of ferns and other plants, including the common brake, *Pteridium aquilinum,* and several gleichenias. *Lycopodium cernuum* was much in evidence, trailing over some of the trees. Among the commonest trees were dacrydium, leptospermum, and some rhododendrons. Most of the trees were thickly clothed with moss and leafy liverworts, though the densest growth of this sort was found a little farther up the ridge.

In this neighborhood the animals have so little acquaintance with man that they are not very shy. During the afternoon a small, black shrew wandered into camp and even ran around over the bodies of the men who were lying down. When scared away it would run only a few feet and would then return to renew its investigations, displaying far more curiosity than fear. A small, dark-colored bird, which was quite common, displayed the same curious freedom from fear, alighting within a few feet of the men and flying away only a few feet when one tried to frighten it. It would follow one about, and was evidently of an inquisitive and investigating disposition.

March 18th.—Started out about 8 o'clock, following the ridge up through the very dense, mossy forest. It was a very clear morning, and we had some very fine views out over the lowlands. About noon we reached

Paka Paka, which has been the highest camp of all those who have climbed the mountain. It is usually spoken of as the cave, but is in reality a slight shelter formed by some huge boulders which have lodged alongside the stream. The latter here comes down at a very sharp angle and plunges over a great precipice a short distance below the cave. It is, of course, a very swift little stream, and the water in it is almost ice cold. The highest temperature recorded at Paka during our stay was 54° at 1 P. M. The only rain to-day was a few light showers. The cold to-night was extremely uncomfortable, although we had a good fire within our shelter. The Dusuns seemed to stand the cold much better than I did, although they did not have nearly such good covering. The altitude of this place is 10,000 feet A. T.

March 19th.—A bright, cold morning with some frost. Started out about 7 o'clock, taking only those men best qualified to climb. In less than an hour we reached the edge of the bare granite cap of the mountain at about 11,000 or 11,500 feet A. T. From here to the top the only vegetation was such as found lodgment in the crevices of the rocks. The leptospermum, which was a tree of about twenty-five or thirty feet in height at 7,500 feet, was here a small plant only a few inches in height; but the flowers were of about the same size in both places.

Before beginning our climb up the steep rocky slope, we had to wait for the Dyak policeman to fire a few volleys with his rifle. This was to apprise the spirit of the mountain that a white man was coming up. The ascent of the rocky slope was not remarkably difficult, though I found it necessary to go on all fours in places, and was occasionally troubled with shortness of breath because of the altitude. The rocky slope extends for about two or two and one-half miles. In places it looks almost like a huge natural amphitheater. It is interrupted here and there by huge rocky pinnacles of various forms. The rock is a gray granite. About 10 o'clock we reached the summit of what seemed to us the highest pinnacle. At this point I deposited a Sierra Club cylinder containing a record of the date and the names of the men accompanying me. This cylinder was placed alongside the bottle record left by Miss Gibbs in February.

It was a very clear day and the view was magnificent. Practically the whole northern coast of Borneo was in sight, and we could see far into the interior. After an hour and a half on the summit we started down, for the clouds were rapidly closing in and the descent is much more difficult than the ascent. We reached Paka again in the afternoon about 2 o'clock, rather tired. About 4 P. M. a heavy thunder-storm commenced, and in a very short time the small stream past the cave had risen a number of feet and was making a terrific noise. During the night, which was clear, the stream subsided again and by morning it was down to its normal size.

March 20th.—The descent was notable only for the very heavy rains which made the going more difficult than would otherwise have been the case. We reached Kiau again on the afternoon of March 21st, thus having consumed six days with the mountain excursion. The round trip from Kiau could certainly be made in less time by several days were it not for the necessity of making night camp at Lobang and Kamburangah to permit of prayers being made at those places.

On our return to Kiau the men were promptly paid the stipulated wages and were each given some slight trinket in addition to encourage their good will. They were so well pleased with the trip and with themselves that they proceeded to celebrate by engaging in a drunken spree, which was kept up all night. Next morning I could not find enough sober men to carry my things on the return trip to Kotabelud, so it was necessary to get women to carry some of the packs. They proved more satisfactory than the men, being more used to carrying heavy cargo. We made a leisurely trip back to Kotabelud, arriving there on the 24th of the month.

ASCENT OF RED PEAK.

By S. L. Foster.

One day in August, 1910, after a delightful half day's horseback climb past famous waterfalls and through virgin forests of Douglas spruce, cedar, and pine, I found myself alone, about noontime, in gentian-covered Starr King Meadow. It lies at an altitude of about 8000 feet. The guide, saddle horse, and mule that had brought me and my traps from Yosemite Valley that morning were just disappearing among the trees on their way back. To the west the bare, conical dome of Mt. Starr King, 9200 feet high, stood up strikingly out of the otherwise unbroken forest, while to the east, above the tree-tops, could be seen the grotesquely splintered summit of Clark Mountain. I walked around a few minutes in the balmy sunshine enjoying the absolute quiet and the realization of my freedom from every restraint of civilization—like a bird out of its cage or a bear loose again in his native woods. Then, cheerfully shouldering my sleeping bag and two weeks' supply of provisions, I began making my way through the stately corridors and aisles formed by the immense fir and pine trees. Passing over the ridge to the east of the meadow I soon found a suitable camping place in an opening just inside the edge of the forest that fills the huge amphitheater at the headwaters of the Illilouette.

Before descending to the river bed I sat down and for a long time gazed admiringly from this bare granite eminence over the assemblage of magnificent trees standing below me like an army of hundred-foot soldiers at "attention," and filling the eight-mile basin solidly from rim to rim. It seemed as if I might be looking at some vast audience of giants just after their leader had asked every one to rise and join in a grand chorus. It was a most impressive scene.

I established my camp at about 7500 feet elevation at the junction of two rushing mountain streams. A hasty study of the geological map led me to identify them as Illilouette Creek and Clark Fork. Later, to my sorrow, they turned out to be Clark Fork and Gray Creek. I was so buried in the forest that I could see nothing but trees on all sides. Yellow pine and tamarack, silver fir, balsam fir and quaking aspen hemmed me in, but I had a fine flat-topped granite boulder for a fireplace and table, plenty of fuel and water at hand, and an abundance of balsam fir boughs for a bed. A tall yellow pine, six feet in diameter, stood in the center of the clearing and furnished in the roughness of its bark convenient points for suspending my few household articles.

Subsequent events showed that this camp-site was really a playground or a fighting place for Douglas squirrels, who raced madly about every morning at dawn. They barked in wild hilarity and often waked me too early for my taste. One morning, for instance, they scrambled past my face and over my bed, then up and around my pine-tree pantry, ignoring and avoiding my precious utensils but giving numerous jolts to my nerves. I kept perfectly quiet, enjoying it all and seeing all I could without disturbing the fun. I finally made out that the chaser must be the proprietor of that grove, and the chased some intruder.

After a few meals from the mountaineer's usual freak bill of fare, I started out at six one morning to climb Red Peak—11,700 feet high—though its top was not visible from that side of the range. I expected a hot day's work, wore only a sleeveless nainsook undershirt and a pair of light tennis trousers and carried a meager lunch of Swedish bread and bacon sandwiches.

It was a glorious day in a glorious place. I felt exhilarated in every faculty. As a Canadian guide quaintly expressed to me his feeling on climbing some ridge at dawn while carrying mail to Ottawa, "I felt as if I was fresh born." Guided only by the music of the tumbling water, I joyfully wandered along at the beginning on the open park-like floor of the forest, hearing everything, seeing everything, pleased with everything. Occasional glimpses through the tree-tops of nearby Clark Mountain, or Gray Peak ahead or beside me, or of Mt. Starr King behind me, assured me of the general accuracy of my upward course, which gradually grew steeper and steeper. It was harvest time for the squirrels, but each one seemed able to spare time to stop and present me with a piece of his mind as I passed. The blue jays, too, readily left their occupations and screamed out their disapproval of my appearance. I met three mild-eyed does, who quietly loped off out of sight, but a fine old buck with his horns "in the velvet," after a few indecisive steps of alarm, stood his ground and calmly gazed at me across a meadow a hundred feet away with an expression as if he were enjoying it as much as the average small boy enjoys a circus parade. He was no "spike buck" nor "forked horn," but possessed a magnificent set of branching antlers such as the murderous nimrod likes to hang up as a trophy.

I renewed my old acquaintanceship among the flowers and made some new ones. Beautiful blue larkspurs that grew on stems one and a half to two feet high near San Francisco, here grew on stems six feet long in generous two-foot racemes. The charmingly colored delicate pink mimulus and the queerly shaped purple monk's hood nodded over the stream, while the cardinal castilleias shone forth on three-foot supports. In the chance bits of bog or meadow companies of the striking little alpine (tiger) lilies raised their orange and vermilion heads on tall stalks above the other vegetation as if superior to the rest. On the dry granite slopes the scarlet bugler and the scarlet gilia brightened up the scene unexpectedly, while further up I met with the interesting spikes of pink elephant's heads, the dainty May queen's lace, the fragrant blossoms of the grass of Parnassus, the purple cyclamen, the golden stars and the white violet. Last of all at the snow line came the lovely pride of the mountains (the magenta pentstemon), the rosy alpine heather or bryanthus, and the lilac-tinted alpine phlox. These cheery mountain blossoms were not disclosed in great patches and fields of bloom like the eschscholtzia, the orthocarpus, the iris, and the godetia of the lowlands, but occasional, secluded and unexpected like the deer, the bears and the mountain quail, and so the more attractive and appreciated.

I enjoyed wild currants, thimbleberries, elderberries and a few strawberries, and I peered into every pool for trout. In this latter search, however, I was disappointed.

Except for a chance case-making caddis worm lumbering along the bottom, or a water strider darting about on the surface, the crystal snow water was as devoid of life as if it had just come from under a glacier.

While resting in a field of barren talus I suddenly became conscious of being stared at. About twenty feet away I spied a native looking at me in open-eyed amazement. His head was about the size of a domestic cat's, but with short erect ears and a long nose like a fox's or a weasel's. His coat was reddish above from the nostrils back and yellow below. I saw only this little fox's head and shoulders and saw them only as long as I remained motionless.

It was one of those balmy, sunny Sierra days, and back and forth as the wild goats on Santa Catalina Island taught me twenty years ago, I zigzagged up the steep, heavily timbered ridge between Gray Creek and Red Creek, almost always in the shade of grand yellow pines, mountain pines, or silver firs. The cones on the silver firs stood erect on the topmost limbs like little barrels, contrasting sharply with the long pointed cones of the sugar-pine seen suspended from the tip ends of the branches. Higher up I met old, thick set junipers, lost the yellow pines, and at the timber line found the tough dwarf or white-barked pine last of all.

Having had such a good time botanizing, taking notes, studying the geological quadrangle, and exchanging repartee with the squirrels, the jays, the water ouzels and finally the Clark crows, who announced my arrival above the timber line with rather unnecessary vigor, I did not reach the limit of vegetation in the cirque under the south face of Red Peak till noon. Here at about 10,000 feet elevation I lunched, took a rest, and was amused to notice a new character watching me. His nose was blunt, his ears short and his tail resembling that of a prairie dog or a beaver. He studied me with such consuming interest —now lying down, now standing erect on his hind legs, that I came to the conclusion that this mountain beaver (?) was collecting material for a book on "Mountain Climbers That I Have Met."

Remembering that Twin Peaks in San Francisco are 900 feet high, I estimated that it was about 500 feet more to the top of Red Peak from where I lunched at the source of Red Creek. It turned out to be the hardest 500 feet of mountain that I had yet ascended. My experience was midway between going up steep stairs and climbing a ladder, for I had to use my hands as well as my feet many times. This Red Peak, whose monumented top I saw for the first time from the saddle between it and Gray Peak at two o'clock, ought to have been called Red Knife-edge. The highest peak is located on one of three knife-edges or arêtes radiating from a common center. This knife-edge, moreover, is not composed of enduring material like solid granite, but seems as if made of loose pieces cemented with a substance which time dissolves or which yields readily to the splitting action of the frost. On the north face the rock has disintegrated until there is a nearly vertical precipice three or four hundred feet high. On the south and west exposures the surface is as nearly vertical as the angle of repose will permit rock talus to be.

I did not reach the top till two-thirty, but found the view, which is always considered to be the mountain climber's ample reward, fully up to expectations, especially across the cañon of the Merced toward Mounts Lyell and Ritter. The atmosphere was clear and the sunshiny day perfect. Snow was nearly gone except on the northern slopes of the highest peaks. I sought for, but found no Sierra Club canister in the monument. Having little time to spare and not even a comfortable place to sit, after counting forty-two emerald or sapphire-colored lakes and locating many of the most celebrated summits both higher and lower than my 12,000-foot outlook, I started back via Ottoway Creek. I wished to see the great cirque between Red and Ottoway Peaks and to return by a different route than the one by which I came up, since the map showed Ottoway Creek entering the Illilouette above Red Creek.

The strongest impression left on my memory from my survey over the granite landscape below was the almost pitifully small proportion of the vast area that was covered with vegetation. The forest to the west, through which I had passed during my ascent of the mountain, was not visible from the top where I stood.

The long hour spent descending that awful rock pile from Red Creek was more exhausting than the three hours consumed in climbing on the other side. Everything seemed to lose balance as soon as I stepped on it. I regaled myself with generous handfuls of snow as a solace for the hard work when I reached a level spot.

This Ottoway Peak could very appropriately have been called Blue Peak, since it has a sky-blue color. Thus it contrasts with Red Peak, which is really red, varying in color all the way from Etruscan red to yellow.

After resting leisurely, viewing the great cirque and deep blue glacial lake at its base, and fully gratifying my city appetite for snow, I discovered that it was five o'clock and concluded that it was time to begin hurrying if I was to cover in two hours the ground that took practically eight hours coming up. Collecting flowers, writing notes, and gossiping with natives were cut out, and I hastened along the forest-covered path of the ancient glacier, high up out of sight of any stream, but presumably near it and expecting every minute to meet the Illilouette Creek that

I had ascended. At six o'clock, much to my surprise, I discovered that my path was leading me toward a rushing stream coming from the south into the river course in which I was, and that it was a stream larger than the one that passed my camp. I saw that I had lost my bearings, but felt that I could still reach camp if the daylight lasted, since I could see Mt. Starr King occasionally ahead of me as a guide.

Six-thirty came, and seven. I passed the conspicuous red sign of a soda spring and a gorge waterfall like the Rancheria Falls in Hetch Hetchy, though not as high. I saw a cave, the first that I had seen in the Sierra, with a circular entrance about eight feet in diameter in the face of the solid granite cliff above the stream, and accessible only at low water, but I had no time to investigate then. I tried climbing the ridge intervening between my present river bed and that to the north, presumably the one of my camp, but was driven back by the aspen and the manzanita. It was now rapidly growing dark in the thick forest. Seven-fifteen came and I got around the lower end of this ridge and squared away for home. Seven-thirty and night closed in and I was lost. I was neither an owl nor a chipmunk and was almost helpless in the darkness of the dense growth of the river bottom. I could not tell time by my watch, and after struggling through a tamarack thicket and probably passing near my camp, I fought out into the comparative open under a small dome and admitted to myself that I would have to pass the long, cold night practically without fire, bed, clothes, sleep or food.

I heard once that Mr. Muir had danced all night on Mt. Whitney's 14,500-foot top to keep from freezing, but after fifteen hours of almost continuous exertion and no supper I did not feel like dancing. I tried to climb the dome to reconnoiter, but after stumbling in the pitchy darkness through the baffling labyrinths of manzanita and buckthorn brush for half an hour, catching my clothes on the obstructions, scratching my arms and face, and tearing the ring out of my watch, I gave up the attempt. Then it occurred to me that the weather-beaten granite boulders that looked so ghostly in the starlight might have retained some of the heat from the afternoon sun, and finding them warmer than the air I snuggled down in a sheltered corner to rest. When I began to cough, however, I felt that the hospitality of those rocks was not going to suffice.

Clad in my vulnerable tropical attire, it seemed to me as if the chill night draughts flowed down from the snowy peaks like breaths from the north pole. It was certainly a "nipping and an eager air" that night, as Horatio would say.

I thought of my canvas leggings, and removing them hung them around my neck, one in front and one behind under my summery raiment. When finally my teeth began to chatter I decided that I would really have to dance.

In the dim light from a moonless sky in a pine forest I felt out a straight course on the sloping hillside that was free of saplings, cones and dead branches between two giant pine trunks and forty of my paces long. Thirty round trips I estimated would make a mile and occupy half an hour. Every six round trips I went through six movements in eight different gymnasium performances, which any one familiar with dumbbells or chestweights can imagine. Every ten trips I lay down on the pine needles and took a short rest, the biting wind effectually preventing my falling asleep.

Once, going toward the low murmur, I worked my way in the darkness down to the stream for a drink of water, and several times I heard the breaking of large twigs as if an inquisitive deer had been attracted by my unusual performances. Thoughts of bears or mountain lions did not worry me at all as I had never yet been molested, and I had a five-inch bladed bowie knife that gave me confidence. Rattlesnakes, I had always understood, if present at all were usually not abroad after dark, Pneumonia and bronchitis were the enemies that I feared through that cheerless night, and I could easily believe that their germs were seated on the logs and boulders nearby, coldly watching my efforts to keep warm and awaiting the psychological moment to make their appearance.

Thirty—sixty—one hundred and fifty round trips had been tramped with the corresponding gymnastic exercises, and I was in doubt whether it was only midnight or two in the morning, or whether I could keep that sort of thing up much longer, when Venus, the morning star, blazed forth over the top of Clark Mountain like a beacon of good cheer. Having been a Halley comet enthusiast, I knew that the dawn came soon after Venus became so bright and felt encouraged. It was too cold to star-gaze, however, and I had to keep trudging back and forth till dawn.

At daylight I found myself about 500 feet from my camp. At 4:50 I rolled out my sleeping bag, from which I had emerged at 4:30 the morning before. Pulling on a sweater I was soon in the land of dreams, with my shoes and leggings for a pillow and apparently none the worse for my nine hours in cold storage. I had had twenty-four hours of almost continuous physical exertion, had been twenty-four hours without sleep, and, as I did not get anything to eat till noon, twenty-four hours without food. I was strongly reminded of the comment of the editor of the Sacramento *Bee* the morning after Artemus Ward delivered a $2.50 lecture in the early days. "The audience," the editor said, "was entirely satisfied with the lecture—so well satisfied, in fact, that they did not want any more at the same price."

THE DISCOVERY OF THE NEST AND EGGS OF THE GRAY-CROWNED LEUCOSTICTE.

By Milton S. Ray.

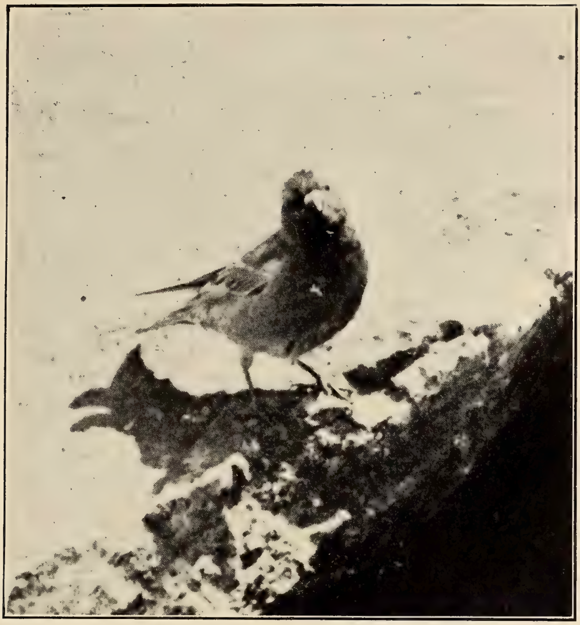
Photographs by Oluf J. Heinemann.

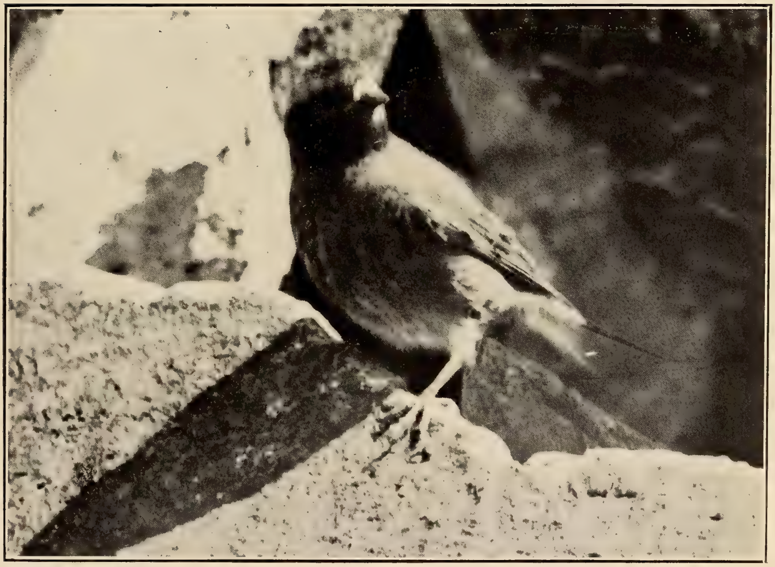
[An extract republished from *The Condor* by courtesy of the editor, Mr. Joseph Grinnell, and the author.—Editor.]

After baffling scores of searching oölogists during the long period since the bird was first described by Swainson, in 1831, the nest and eggs of the gray-crowned leucosticte *(Leucosticte tephrocotis tephrocotis)* have at last been brought to light. The place of discovery is Pyramid Peak, a lofty mountain of the great Sierran chain, in the eastern portion of Eldorado County, California. And now, a nest having at last been found, the reason why the small army of collectors have searched in vain becomes more apparent, the nests being either invisible or inaccessible, probably as a rule both.

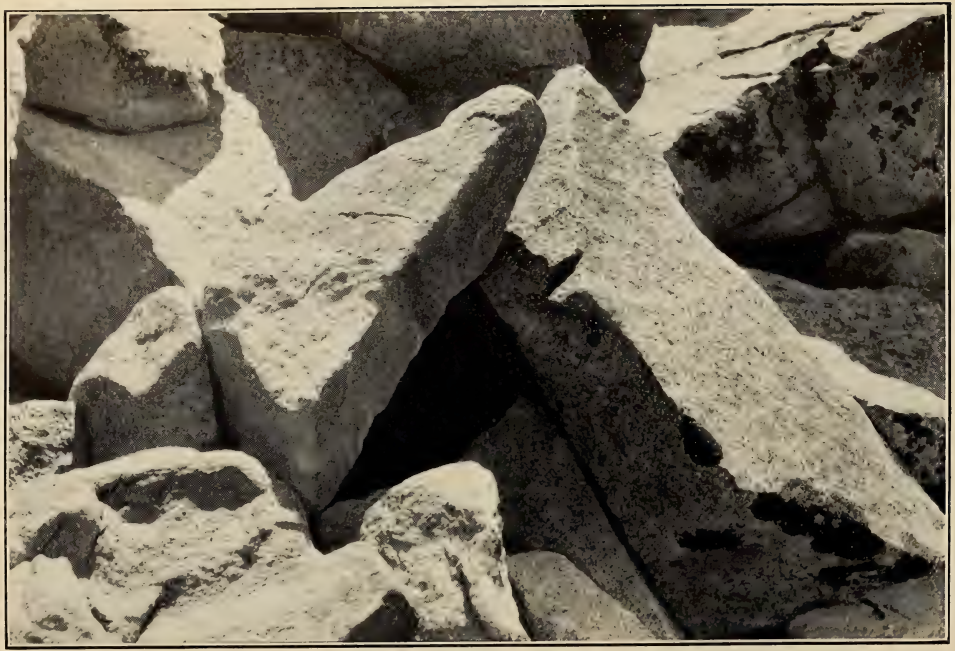
The rosy finch, as some would prefer to call the leucosticte, is ever active either of foot or wing, among the rocks, along the cliffs or while feeding on stranded insects upon the snow. Endowed by nature to combat the fierce gales which prevail almost continually in these high altitudes, this bird possesses great power in its broad stretch of wing. The flight is rapid, in long, graceful, sweeping curves, and the birds mount hundreds of feet even against the strong headwinds without much apparent effort. From the edge of the chasm we noticed a number of birds fly to crevices in the sheer walls of granite on the west side of Pyramid; but as it would have been utterly impossible to follow them we contented ourselves with watching those in more accessible situations.

The males are certainly beautiful examples of bird life, in their brilliant colorings of rich chestnut brown, streaked on the back with dusky and edged on the wing- and tail-coverts with light scarlet. The forehead and





TWO POSES OF THE GRAY-CROWNED LEUCOSTICTE.



THE CENTRAL OPENING LED TO THE NEST, WHICH, HOWEVER, WAS OUT OF SIGHT THREE FEET BACK BENEATH AND BETWEEN THE ANGULAR BLOCKS.

forepart of the crown is black, while the balance of the crown consists of a broad, conspicuous patch of gray. Much of this gay plumage is lacking in the females, however, who are much paler and duller colored. In size the bird is about equal to the mountain bluebird, which it also resembles somewhat in flight, although it is much swifter on the wing than sialia. In grace of build, the leucosticte according to my idea has few equals; the form of its finely shaped head and graceful neck, so often lost in the preparation of skins, can be seen to advantage in the accompanying profile-photograph.

[For lack of space we omit the description of an earlier visit to the summit of Pyramid Peak during which probable nesting sites were located. The narrative of events is resumed on top of the mountain during the successful second trip.—EDITOR.]

We reached the top of the peak about 11:40 and after a quick lunch, for a moderate breeze had begun blowing, we started down to the nesting site. By chance more than from memory I came to the second pile of rocks from the nest. Like the east side, the north side of the peak appeared entirely bereft of its former bird-life; and it was with drooping spirits, although not entirely without a keen feeling of expectation that I approached the nest. My hopes revived, however, as a leucosticte flew out from some nearby rocks, and it was an anxious moment when I reached the aperture among the granite slabs and peered in. In the dim light, among the feathers of the nest, I could just discern three eggs which appeared dark with incubation. When I joyfully informed my expectant companions of the victory, Duttke, who, among other things was yell-leader of the expedition, started three rousing cheers; and no small victory it was, for to me it meant that the two trips to the peak and back, 120 miles, taking almost two weeks' time, had not been in vain.

Heinemann and Duttke now joined me, and the camera was set at once for pictures. As the bird was not in the least afraid, and lit on the rocks all about the nest-entrance while we were arranging the camera, we dispensed with using the long rubber tube. In fact, we soon found that so persistent was the mother-leucosticte in her efforts to reach the nest, that it was necessary time and again to drive her away in order to keep her from entering. I noticed particularly that this bird never used the broken-wing tactics as we had seen others do on our previous visit. The method she employed was to disappear for a time among various nearby rocks, endeavoring to draw us away from the spot. It was on one of these occasions, after our patience had been almost exhausted, that I decided it might be barely possible she had returned to the nest by some of the under-rock passages. On looking in towards the nest all appeared dark and I knew at once the bird must be sitting. It was only due to the fact that the nest and eggs were light colored that they had been visible at all. I experienced considerable difficulty in flushing the bird, almost touching her before she finally left the nest; and then the way she went fluttering along the narrow passage made me fear for the safety of the specimens, which had not yet been collected.

Gently persistent, with those little cheery, pleading notes, over the rocks she came again and again, although repeatedly driven away, and the solicitude she showed could not have but touched the heart of any observer. I must say, even in spite of their extreme rarity, it was not without a certain feeling of compunction that the eggs were taken. Every time the bird returned, when it was possible, a picture was taken and in all we secured nine photos, the best ones being herewith produced. This work covered a period of two and a half hours, and during all this time the male did not appear; in fact, no other birds at all were seen.

At last, for it seems even the patience of the leucosticte has its limitations, the bird would no longer come within camera range, and we turned our attention to the eggs and nest. In order to reach these it was only necessary to move a single boulder, and this, weighing only about 100 pounds, was an easy matter. Even with the boulder removed, Heinemann pronounced the nest photographically impossible. Before disturbing the boulders we had taken a view of the nesting site, so we had to content ourselves with this. Bringing the eggs to light disclosed the fact that these consisted of four instead of three, one being hidden by feathers and the depression of the nest, and instead of being advanced in incubation as we had supposed, they proved almost fresh, two being practically so and two slightly incubated. One of a poetical turn of mind might compare the rosy plumage of the leucosticte with the gorgeous tints of the sunset clouds or liken the eggs to the drifted snow that characterizes its home. The student of bird-life cannot, however, indulge in such fancy flights, if he is desirous of following the straight and narrow path of science. Thus it behooves me to simply state that the eggs are pure white, unmarked, ovate-pyriform in shape, and in size measure in inches: .89 x .62, .90 x .63, .91 x .63, .92 x .62. The sharply pointed end and the peculiarly fine texture of the shell make the eggs at once distinctive. After being carefully taken from the nest, one by one, the specimens were well wrapped in cotton and placed in a partitioned box made of heavy block tin.

Our time was next devoted to the nest. To show how difficult this was to see, I may state that I pointed out the aperture to Duttke and asked him if he could see the nest within. After viewing it from seemingly every possible angle he declared he could see nothing of it and was rather amazed when it was later shown him. Investigation showed the nest was situated in a small patch of soil, in a depression 1¼ inches deep, which had undoubtedly been hollowed out by the birds themselves. As the nest was 2½ inches high it was thus equally above and below the soil. It is a curious fact that this spot was one of the few places on the entire peak where soil was visible. If in all cases the birds penetrate to the soil to build, it would explain why they go to such great depths.

The nest is almost entirely and very compactly made of dry-grass stems and roots. These have the appearance of having been uprooted and are of course of the previous season. As the nearest available grass is half a mile or more from the nesting site, the reason why the building birds made such long trips for material is explained. Fine light-colored grass forms the lining, with the addition of a few feathers. One of the latter runs lengthwise across the bottom of the nest cavity, dividing it in half. Unfortunately a fluffy feather belonging to the nest was blown away on the peak and lost. The nest is oval in shape and the dimensions are as follows: Top, 5 x 3½ inches; cavity, 2½ x 3 inches; depth of cavity, 1 inch; depth of nest over all, 2½ inches.

THE PASSING OF OUR MOUNTAIN MEADOWS

By Harold C. Bradley.

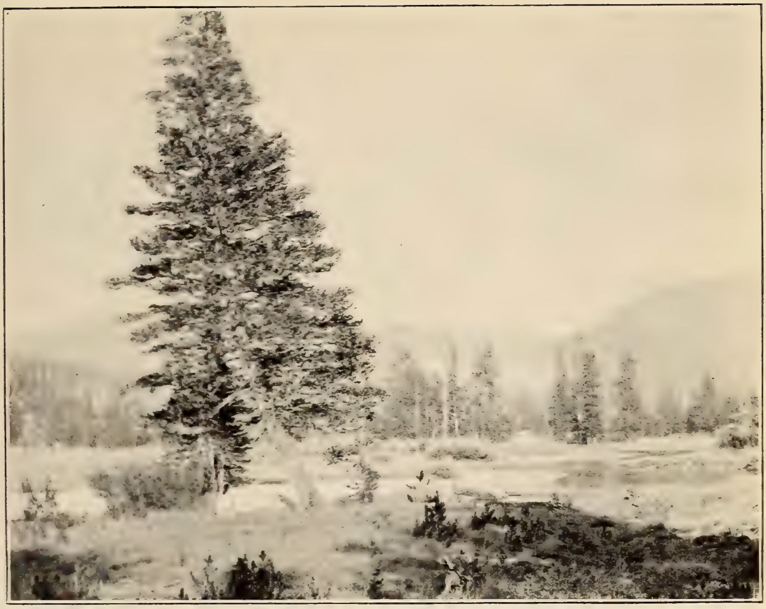
Photographs by the author.

Returning to the Sierra after an absence of many years I was struck with the changes which time had wrought in many of our little forest-rimmed meadows. My first intimation of the change came as I approached Tamarack Flat on the way to Yosemite Valley, intending to camp at the lower end of the flat, where ten years ago were open patches and good feed for the horses. That portion of the flat is now a thicket of young tamaracks, almost impenetrable and devoid of grass. Little Yosemite Valley has in the same way lost many of its smaller scattered patches of meadow before the advancing tamaracks, which there have shot up into jungles of slender, worthless lodgepoles such as one finds in many of the mountain regions of the Northwest. Fifteen years ago there was an abundance of feed about the lower cabins at Lake Tenaya; now one can hardly ride a horse through the mass of little trees which has replaced the sward. In Tuolumne Meadows one not infrequently finds a scattered growth of young tamaracks dotting the grass, and occasionally an extended thicket pushing its way out into the open like an advancing flood, killing the grass and thrusting upward with great rapidity for light and air. Where the trees are not numerous enough to have destroyed the grass, many of the little meadows have to be cleaned out with an axe before they can be used by a tethered horse.

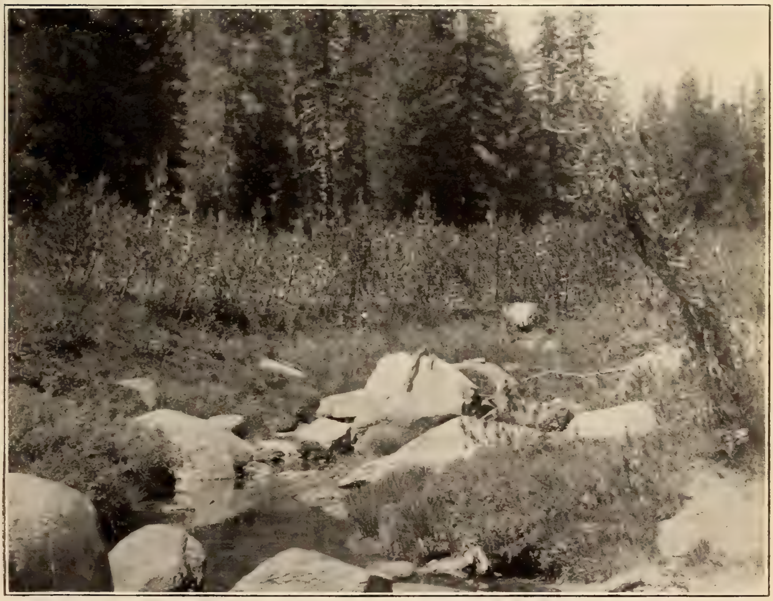
From observations in the park this summer I should estimate that we have lost nearly a quarter of the available feed area of the meadows which lie within the large timber belt. At higher levels the loss is much less; the meadows are larger and more numerous there, and little inconvenience results as yet to the camper. It is only a question of a few years, however, when the higher meadows will begin to show the results of the encroaching pines as clearly as do the lower ones to-day.

There is perhaps no one feature of our Sierra more attractive to the lover of the woods than these little spots of verdure and choice flowers scattered among the desolation of bare rocks and the dark stretches of the heavy timber. They are lovely to look upon. They assure water and good feed for the horses. They make for the comfort and ease of mountaineering in the Sierra. Their deterioration must eventually injure the camper; their loss would be irreparable. It was to preserve the grass of the meadows as well as the trees of the forest that we excluded sheep and have partially excluded cattle. But it is the meadows themselves and not a season's crop of grass that are now at stake. There is no doubt that an excellent open condition of the upland meadows when the Park was first set aside was attributable to the sheep and their herders. The sheep browsed close, and year after year nipped off the seedling pines. What escaped the sheep was killed in the yearly brush and grass fires started by the herders. In this way the natural aging of the meadows and their replacement by trees was checked, and they were kept open, soft, and verdant.

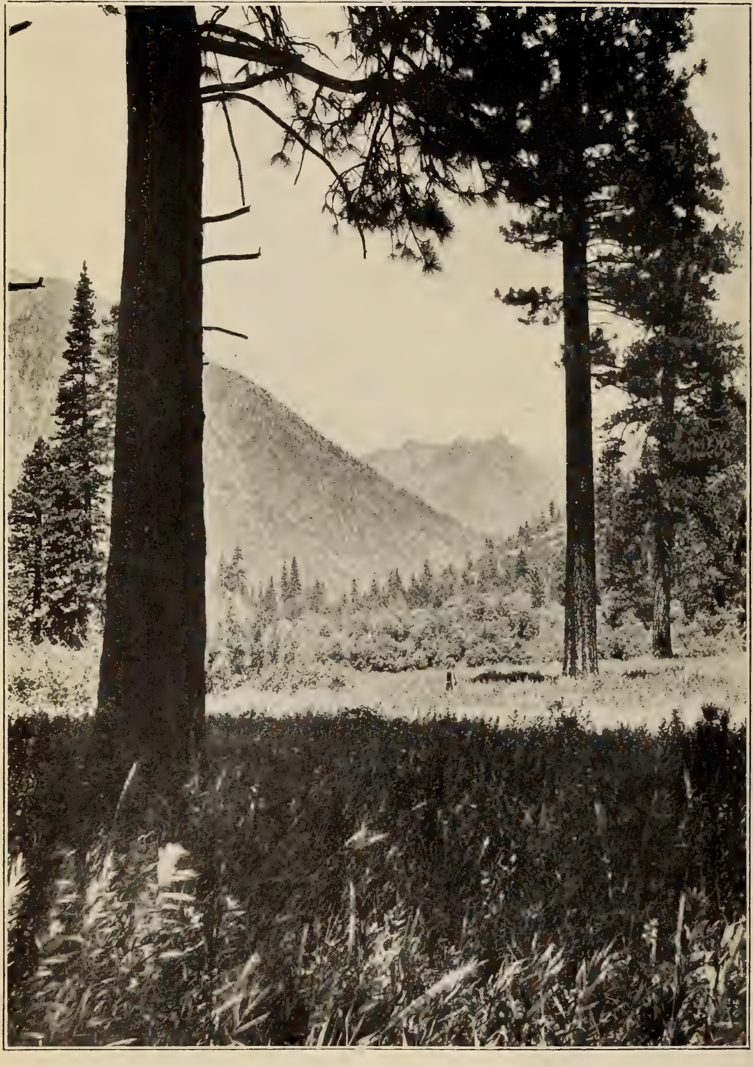
From the greater portion of the Park the sheep have been excluded efficiently now for from ten to twenty years. For a like period extensive fires have been prevented. Some of the natural results of stopping these two agencies are now becoming clearly apparent. Left to itself, the meadow,—which was once a lake bed, a wet glacial pocket, or a spring dammed back by a stick of down timber till peat and silt had filled it—gradually grows drier. Eventually it becomes dry enough for the seedling tamarack to take root. In a few years from that time the meadow is no more. A thicket of spindling pines takes its place, killing the grass and converting the moist spongy soil into a dry flat. The water which before was held in the soil is now carried up into the trees, exposed



TUOLUMNE MEADOWS, SHOWING GROWTH OF YOUNG PINES, 1910.



PORCUPINE FLAT, CHOKED WITH YOUNG GROWTH, 1910.

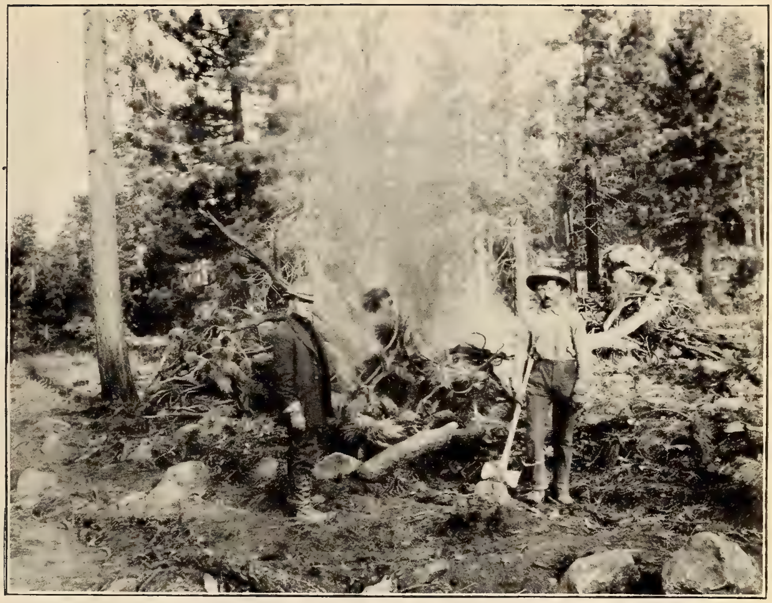


SIMPSON MEADOW, MIDDLE FORK OF KINGS RIVER, 1910.
Photograph by C. W. Pohlman.

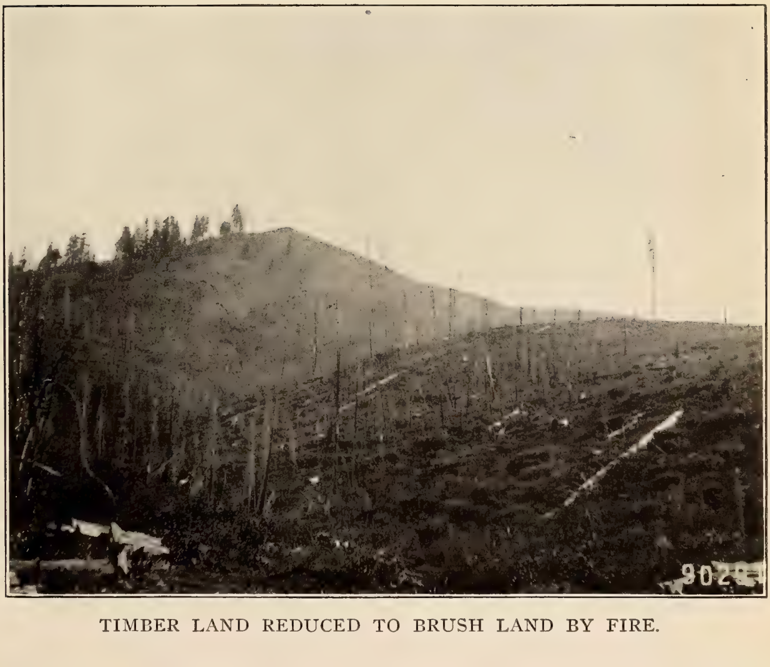
in enormously increased surface to the warm, dry currents of air above the immediate surface of the ground. Many of these spindling lodgepole pines die after a few years; the whole thicket is rather easily blown down or lodged by a severe storm, and in the event of fire it is likely to succumb easily and remain a mass of dead and twisted stalks for the next fire to consume. The dry porous soil, which was before a mass of moist peat, is consumed in the first burning over and is good for nothing for many years. It may come about that a few sturdy trees outgrow and kill the rest, so that in time a fairly good stand of strong timber results. But even should this take place the original meadow was of far greater value than the resulting dry tamarack flat. The meadow is a much more efficient conserver of excess water than is the grove of trees. Its soil is a sponge, soaking up quantities of water as the snow melts, and gradually delivering it to the rill that trickles from its lower edge. A brooklet rising in a chain of such little meadows is almost sure to preserve its flow throughout the season. Conservation of our water therefore, as well as preservation of our mountains' charms, demands that the meadows of the valley bottoms and about the sources of the streams be preserved as carefully as the timber on the valley walls and ridges.

A number of remedies occur to one. Perhaps the best would be the gradual grazing again of the Park by sheep —allowing the sheep to occupy successive portions of the reserve in successive years. A portion of the Park would thus each year be practically closed to campers with pack animals, though it need not be a large portion. Again, our forest rangers, armed with brush-scythes and axes, could do much toward clearing out the young growth from the edges of the meadows. To cover the entire Park once in five years would be no small task. It should be undertaken, however, at once, for each year increases amazingly the size and number of the trees on the skirmish line. We have already lost some of the smaller grassy nooks; let us not through blindness or neglect allow the rest to disappear before the inevitable forward march of the unchecked forest.

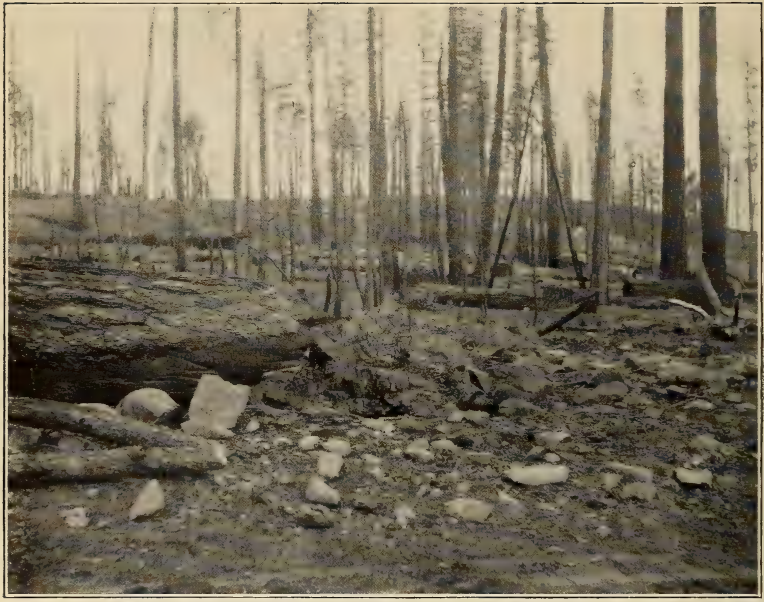
[The facts presented in this article are interesting and deserve further attention. Doubtless fires helped to keep the meadows open. The matter of light-firing is dealt with in another article in this BULLETIN. We are strongly opposed to the suggestion to permit sheep-grazing in the Park. The damage would be far greater than any possible benefit. In our opinion the article does not take account of the fact that these mountain meadows both existed and persisted before the advent of sheep in these mountains.—EDITORS.]



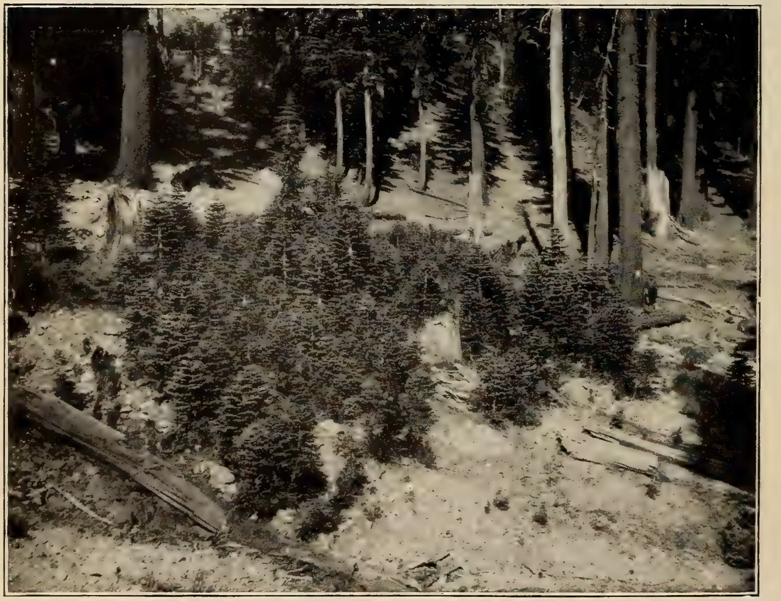
"LIGHT BURNING" AS PRACTICED BY THE FOREST SERVICE.



TIMBER LAND REDUCED TO BRUSH LAND BY FIRE.



SAPLINGS AND POLES KILLED OUTRIGHT BY FIRE.



WITHOUT PREPARATION TOO COSTLY TO BE PRACTICAL, "LIGHT BURNING" DESTROYS YOUNG TIMBER OF THIS CHARACTER, UPON WHICH WE MUST DEPEND FOR OUR TIMBER SUPPLY OF THE FUTURE.

FIRE AND THE FOREST—THE THEORY OF "LIGHT BURNING"

By F. E. Olmsted,
District Forester for California, U. S. Forest Service.

The present intense interest in the forest-fire question is decidedly valuable because it is sure to result in a determined effort all along the line to lessen both the fire risk and the fire damage. Public discussion of the matter has brought to light, among other things, the fact that certain people still believe in the old theory of "burning over the woods" periodically in order to get rid of the litter on the ground, so that big fires which may come along later on will find no fuel to feed upon. This theory is usually accompanied by reference to the "old Indian fires" which the redman formerly set out quite methodically for purposes connected with the hunting of game. We are told that the present virgin stands of timber have lived on and flourished in spite of these Indian fires. Hence, it is said, we should follow the savage's example of "burning up the woods" to a small extent in order that they may not be burnt up to a greater extent bye and bye. Forest fires, it is claimed, are bound to run over the mountains in spite of anything we can do. Besides, the statement is made that litter will gradually accumulate to such an extent that when a fire does start it will be impossible to control it and we shall lose all our timber. Why not choose our time in the fall or spring when the smaller refuse on the ground is dry enough to burn, the woods being damp enough to prevent any serious damage to the older trees, and burn the whole thing lightly?

This theory of "light burning" is especially prevalent in California and has cropped out to a very noticeable extent since the recent destructive fires in Idaho and Montana.

The plan to use fire as a preventive of fire is absolutely good. Everything depends, however, upon *how* it is used. The Forest Service has used fire extensively ever since it assumed charge of the public timber lands in California. We are selling 200,000,000 feet of timber and on all the lands which we logged over we see to it that the slashings and litter upon the ground are piled up and burned. This must be accomplished, of course, in such a way that no damage results to the younger tree growth, such as seedlings, saplings, thickets and poles of the more valuable species. If we should burn without preparing the ground beforehand, most of the young trees would be killed. In government timber sales the purchasers are required to do this work. Under average conditions in California it costs them about $2.50 an acre. It is very probable that the Government could not do it for less. If, now, we should extend this operation to all our most valuable timber lands which have not been logged off (approximately 8,000,000 acres) and provided we repeated the process every three or four years, as would be necessary to obtain good results, it would cost the Government something like $5,000,000 a year, while our total appropriation in California for all work of the Service is only $731,802.17. It would appear, therefore, that if we should perform the work as thoroughly as it is now done in the case of lands covered by lumber slashings, the expense of the job would be out of all proportion to its usefulness.

It is true that the work might be done at less cost, but in that case the results would most certainly be unsatisfactory. "Light burnings" have never been undertaken on an extensive workable scale in California. With the exception of two or three lumber companies the Forest Service is the only owner of timber in the State of California which has used and is using fire in a practical way for cleaning-up purposes.

What "light burning" has been done on private lands in California, accompanied by preparation of the ground beforehand, shows that wherever the fire has actually burned, practically *all* young trees up to fifteen years of age have been killed absolutely, as well as a large part of those between the ages of fifteen and forty years.

The operation, to be sure, has resulted in cleaning up the ground to a considerable extent and will afford fairly good protection to mature trees in case they are threatened by fire in the future. If a fire comes along it will naturally not have as much rubbish to feed upon and may not be so hot as to injure the larger tree growth. In other words, a safeguard has been provided for timber which may be turned into dollars in the immediate future. With this advantage has come the irreparable damage to young trees. It has amounted, in fact, to the almost total destruction of all wood growth up to the age of twenty years.

This is not forestry; not conservation; it is simple destruction.

That is the whole story in a nutshell. The private owner of timber, whose chief concern is the protection of trees which can be turned into money immediately and who cares little or nothing about what happens to the younger stuff which is not yet marketable, may look upon the "light burning" plan as being both serviceable and highly practicable, provided the expense is reasonable. On the other hand, the Government, first of all, must keep its lands producing timber crops indefinitely, and it is wholly impossible to do this without protecting, encouraging, and bringing to maturity every bit of natural young growth. Any attempt to artificially reproduce the area of government forests as a whole would be impracticable from the standpoint of expense and has also proved very uncertain of success. Forest organizations the world over rely chiefly upon a natural regrowth to take the place of the old timber, and planting and sowing are resorted to only in cases where the natural regrowth has failed or is exceedingly hard to obtain; in such cases, of course, planting is indispensable.

This experimental "light burning" has cost approximately 75 cents per acre. Therefore, to clean up and burn the government timber lands in California even partially and most unsatisfactorily, coupled with a most serious loss in young growth (which in itself would prohibit the operation), an expense of something like a million and a quarter dollars a year would be necessary, provided we repeated the process every three or four years, as deemed necessary by those advocating the theory.

As for the "old Indian fires," in California alone they have reduced over 2,000,000 acres of valuable timber lands to non-productive wastes of brush; they have damaged the mature stands of virgin timber which we now have to the extent of reducing their original volume by at least thirty-five per cent; and they have practically eliminated most of the young growth in their paths up to thirty years of age. This is a fact fully sustained by the most casual observation on the ground.

The accumulation of ground litter is not at all serious and the fears of future disastrous fires, as a result of this accumulation, are not well founded. Fires in the ground litter are easily controlled and put out. On the other hand, fires in brush or chaparral are very dangerous, destructive, and difficult to handle. Brush areas under and around standing timber are the worst things we have to contend with. Brush is not killed by fire; it sprouts and grows up again just as densely as before. The best way to kill brush is to shade it out by tree growth, but to do this we must let young trees grow. Fires and young trees cannot exist together. We must, therefore, attempt to keep fire out absolutely. Some day we will do this and just as effectively as the older countries have done it for the past 100 years. In the mean time we are keeping fires down in California by extinguishing them as soon as possible after they begin. It is true that fires will always start; that we can never provide against. On the other hand, the supposition that they will always *run* is not well taken. If we can stop small fires at the start, big fires will never run. With more men, more telephones, and more trails we shall be able to do this and at a cost of only a cent or two more an acre. We are now expending barely half a cent an acre in fire protection.

Another argument is that if the ground is kept clean by "light burnings" we shall never have any "crown" fires, and the frightful conflagrations in Montana and Idaho during last summer are pointed to as examples of criminal negligence on the part of the Forest Service. It is said that if we had burned over the ground lightly from time to time such fires would never have occurred. As a matter of fact no amount of "light burning" would have made any difference whatever. If we had burnt the ground until there was nothing upon it but bare earth the same disastrous results would have followed. The fires were in the *tops* of the trees, advancing in solid masses of flame. The condition of the ground had absolutely nothing to do with it. The top-fires resulted, in the first instance, from many small and scattered ground fires which the inadequate force was unable to get to, control, and put out at the start. Then came the hurricane, which carried these fires up into the crowns of the trees. If the small fires had been properly put out at the very first there would have been no ground fires. If there had been men enough, telephones enough, roads and trails enough, they could have been extinguished and we should have had no "crown" fires.

The theory of "light burning" is sound. The Forest Service uses it in practice, has done so for years, and will continue to do so. "Light burning" cannot be considered, however, unless it is preceded by such thorough preparation of the ground as will insure complete protection to young growth when the fire comes along. At present this preparation cannot be made effective except at an expense which is wholly out of the question. If it could be done at a reasonable cost, we should gladly and immediately extend our fire cleanings as practiced on lumbered areas to all uncut forests.

SIERRA CLUB BULLETIN.

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The purposes of the Club are:—"To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada Mountains."

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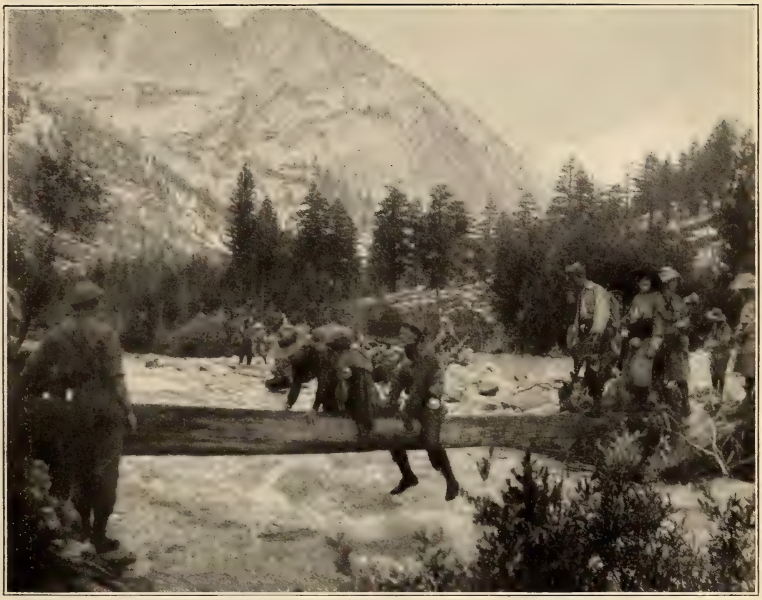
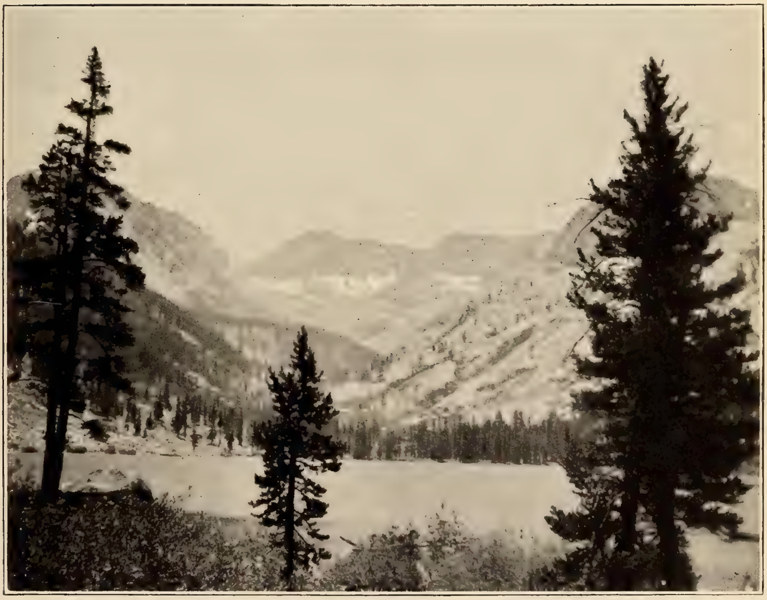
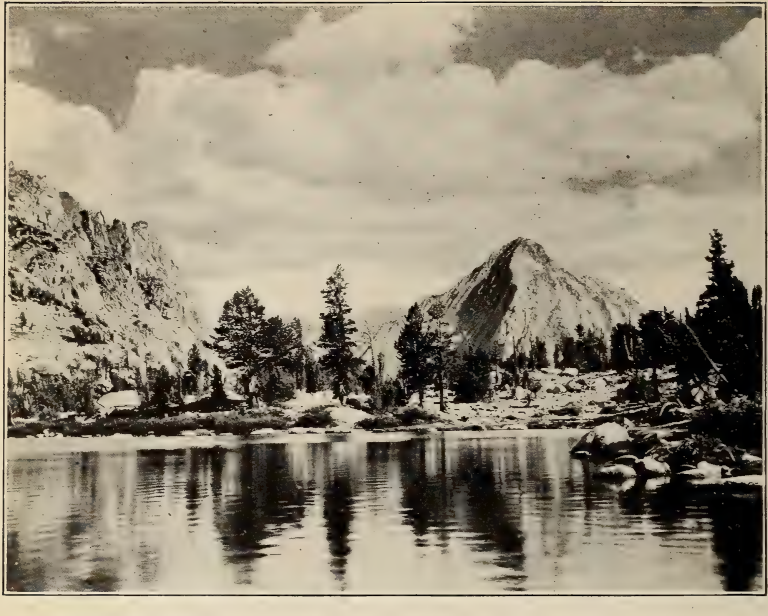


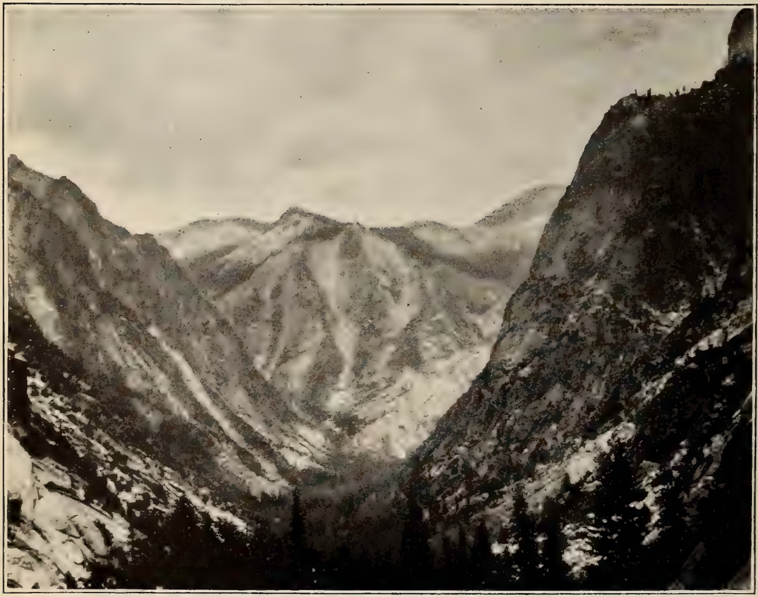
CROSSING WOODS CREEK UNDER DIFFICULTIES, 1910.
Photograph by R. L. Glisan.



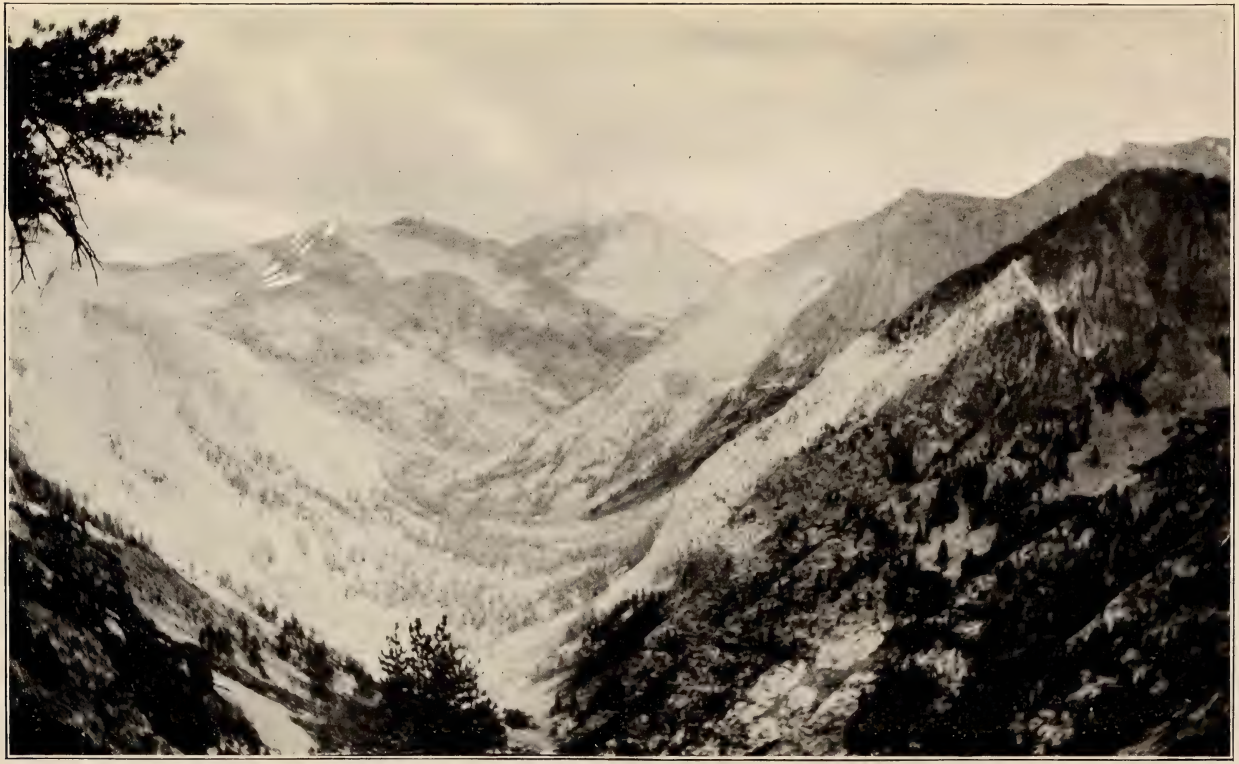
EAST LAKE FROM OUTLET, 1910.
Photograph by H. E. Bailey.



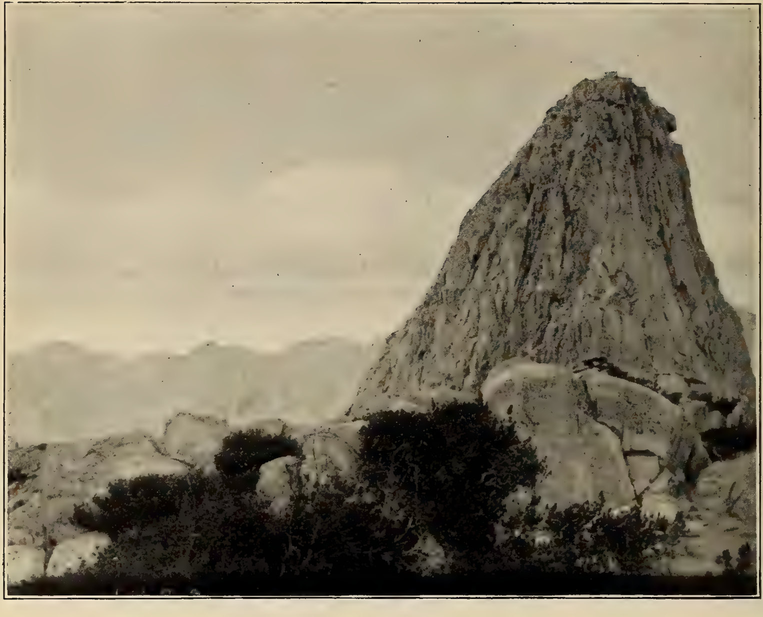
EAST VIDETTE, LOOKING ACROSS BULLFROG LAKE, 1910.
Photograph by C. W. Pohlman.



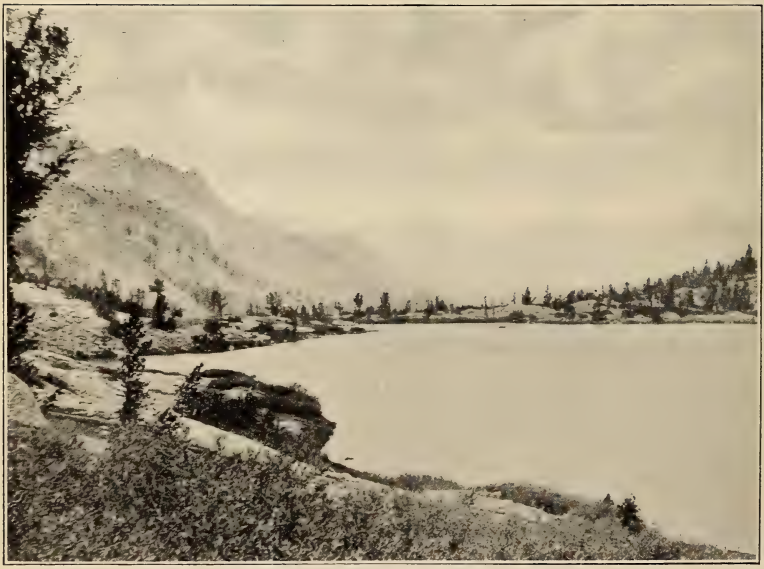
LOOKING DOWN CAÑON BELOW PARADISE VALLEY, 1910.
Photograph by Arthur Gray.



LOOKING UP WOODS CREEK CAÑON FROM DOME AT HEAD OF PARADISE VALLEY.
Photograph by M. V. Tenney.



FIN DOME FROM THE SOUTH.
Photograph by E. T. Parsons.



LOWER END OF RAE LAKE.
Photograph by Mabel Sykes.

REPORTS.

REPORT OF OUTING COMMITTEE, 1910 OUTING.

The Tenth Annual Outing of the Sierra Club was an eminent success in every respect. There were 175 regular members in the party, among whom were more than a dozen members of the Chicago Geographical Society.

The main camp was established in Kings River Cañon, but only a few stayed in that camp during the entire Outing. Nearly the entire party spent a week in the camp established just above Vidette Meadows. A party of about 30 climbed University Peak, and another of 46 climbed Mt. Brewer, and Bullfrog and Charlotte lakes, Kearsarge Pass, Center Basin and other nearby points of interest were visited. A few knapsacked over the Kings-Kern divide and climbed Mt. Whitney. Quite a few knapsacked over Glenn Pass and after visiting Rae Lake and vicinity, joined the main party in Paradise Valley. After returning to Kings River Cañon from the Vidette Camp, the main party started on another side trip up into Paradise Valley. The new trail via Mist Falls, which was built with funds contributed by Fresno County, the Forest Service, a transportation company, and the Sierra Club, proved of inestimable value. This trail has made Paradise Valley and the Rae Lake country easily accessible from the Kings River Cañon, and since it is the finest region thereabouts, nearly all who visit the cañon are taking advantage of it. The Club never undertook a more satisfactory piece of trail work. While the trail is somewhat rough in places, it is a splendid piece of work considering the limited funds available. A brief storm occurred while the main party was in Paradise Valley, and though it delayed the trip to Rae Lake for a day, it proved a novel experience and the wonderful cloud effects more than repaid for the temporary inconvenience. Camp was established on the shore of Rae Lake and the sentiment was unanimous that this was the finest lake region in California. The towering mountains and wonderfully colored cliffs rising from the very edge of the lake, reminded many of the beautiful lakes in the Canadian and Swiss Alps. This region, with its splendid trout fishing, is destined to become one of the famous tourist resorts of California. Members of the party discovered on the steep slope at the upper end of the lake traces of the remains of Kenneth Archibald, a daring and beloved member of the Club who lost his life while making a trip in this vicinity in 1908. It was a relief to all, especially to his relatives, to put at rest any doubt as to the manner and place of his death.

Several members of the party knapsacked across the upper basin of the main South Fork of the Kings River and over the divide by Marion Lake, and down Cartridge Creek into Simpson Meadows and the main Middle Fork Cañon, returning by way of Granite Basin. After this delightful outing, the party returned more than ever convinced of the fact that the Kings River region is to become one of California's great attractions. Trips in future years are planned to the Middle Fork and to the Upper Basin of the South Fork and vicinity of Bench Lake.

The Club will return to the Yosemite National Park for its annual Outing in July, 1911, and take the wonderful circuit of the park that has already been announced in a preliminary circular. This trip presents an exceptional opportunity to visit Yosemite and the other grand features of the Yosemite National Park, including the Tuolumne Meadows, Grand Cañon of the Tuolumne, Hetch Hetchy Valley, etc.

The special railroad rates due to the meeting of the National Educational Association in San Francisco in 1911 will make it possible for many Easterners to take advantage of the trip.

Respectfully submitted,

WM. E. COLBY,
J. N. LE CONTE,
E. T. PARSONS,
Outing Committee.

LE CONTE MEMORIAL LODGE.

A complete report of work in connection with lodge maintenance and details of the wonderfully successful season of 1910 will be given in the June BULLETIN.

NOTES AND CORRESPONDENCE

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comments and suggestions on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, fish, forests, trails, geology, botany, etc., of the mountains, will be acceptable.

The office of the Sierra Club is Room 402 Mills Building, San Francisco, where all Club members are welcome, and where all the maps, photographs, and other records of the Club are kept.

The Club would like to secure additional copies of those numbers of the SIERRA CLUB BULLETIN *which are noted on the back of the cover of this number as being out of print, and we hope any member having extra copies will send them to the Secretary.*

Two of our Boston members, Mr. Edward W. Harnden and Mr. Herbert W. Gleason, enjoyed a month of mountaineering among the Selkirks at the headwaters of the Columbia River during September, 1910. The district, which is said to contain some of the highest peaks and most notable scenery of the Selkirks, is in great measure unknown and unexplored. Mt. Hammond (12,125), which was unsuccessfully attempted by Professor H. C. Parker last year, was conquered by a member of the party, Mr. C. D. Ellis, of Windemere, B. C., who carried an aneroid to the summit. The party was encamped at the Paradise Mine, at an elevation of 8,000 feet. A sharp ascent of 1,500 feet brought them to a lake in Clearwater basin, where the real climbing began. The first reach was a hand-over-hand climb up an almost perpendicular wall for more than 1,200 feet. "All around lay a panorama of unnamed peaks. To the north the rugged backbone rose sharply away, terminating in the magnificent head known as Mt. Hammond." The climbers followed this ridge to a height of 11,000 feet, beyond which Mr. Ellis proceeded alone. The upper reaches are of limestone, and through a crevice, which was rather hazardous owing to lack of firm footing, Mr. Ellis gained the summit. The crown, which is covered with fragments of green lime shale tinged with red iron stain, is split into almost equal parts, the south summit being a few feet higher than its fellow. Records were deposited here in a bottle by Mr. Ellis. Mt. Hammond was named in honor of the late Herbert Carlyle Hammond of Toronto, a public-spirited man who for years was interested in developing British Columbia. Mr. Gleason, who has secured some beautiful photographs of this region, writes: "There are at least seven mountains in the vicinity that out-top Mt. Hammond, and I think some may reach over 13,000 feet. Mr. Harnden and I both agree that this is the greatest alpine country we have yet seen, and we are planning already to come back here next year."

The Alpine Club of Canada has recently established headquarters and a clubhouse at Banff. Six acres of ground have been leased from the government for forty years, and upon this is set the clubhouse and sections of tents. The clubhouse, which is a wooden structure built at an approximate cost of eight thousand dollars, includes executive offices and a huge living-room, while close at hand is a tented dining-room. They have a library, well supplied with books and maps. The tents have wooden floors and are simply furnished. The Alpine Club of Canada is only four years old, but it has already a large membership and is among the most progressive of the clubs of its kind.

MEXICO, D. F. Dec. 15, '10.

MR. WM. E. COLBY,
302 Mills Bldg., San Francisco, Cal.

Dear Mr. Colby: On December 12th I placed Sierra Club Register No. 6 on the summit of Ixtaccihuatl. The exact elevation I have not been able to obtain, as reliable data of any kind are hard to get in Mexico. It is approximately 16,200 feet.

The party consisted of Messrs. Zeamer, Van Hagen, Rivas, Cooper, and myself. We all suffered from mountain sickness; I slightly, the others severely; and Zeamer and Cooper were not able to reach the summit on that account.

I left the register in a box of heavy sheet zinc which I made especially for the purpose, but as the summit is entirely covered with snow, I am afraid it will disappear before long.

Ixtaccihuatl is the only mountain in Mexico which has glaciers on it, and it is also much more heavily covered with snow than any other. It was not so cold, however, as we had feared, and we had splendid, clear weather.

I hope to be able to climb Popocatepetl before long and leave Register No. 7 there. Sincerely yours, R. W. POINDEXTER, JR.

SAN FRANCISCO, December 5, 1910.

TO THE PRESIDENT,
THE SECRETARY OF THE INTERIOR, AND
THE SECRETARY OF AGRICULTURE,
Washington, D. C.

Sirs: We have just been informed that certain unique features of the Sierra Nevada, possessing great scientific significance, as well as remarkable scenic beauty, are in danger of being destroyed. These are commonly known as the "Devil's Post Pile" and "Rainbow Falls," situated in the Sierra Forest Reserve on the Middle

Fork of the San Joaquin River and within a few miles of its source. An application for a reservoir site for power purposes is now pending before the local officials having jurisdiction, and we are informed will be acted on in a few days. The use of such a reservoir site will result in the flooding and obliteration of the Devil's Post Pile and the possible use of the Rainbow Falls. These features were originally included within the boundaries of the Yosemite National Park, but were unfortunately excluded when the area of the park was diminished in 1905.

We feel that before any such permit be granted, the situation should be carefully examined to ascertain just how serious this damage will be, and we urge the protection of these wonderful features by the establishment of a national monument so that they may remain objects of scientific and scenic interest.

Photographs of these features are enclosed herewith.

Very respectfully,
John Muir,
A. G. McAdie,
J. N. Le Conte,
Wm. E. Colby,
Wm. F. Badè,
E. C. Franklin,
W. C. Morgan,
E. T. Parsons,
Willoughby Rodman,
Board of Directors of the Sierra Club.
Per Wm. E. Colby, *Secretary.*

The Mazama Club Outing to the Three Sisters, in Southern Oregon, last August, proved to be of exceptional interest. The region is comparatively little known, maps are hard to find and not altogether to be relied upon, so to the great beauty of the scenery and the interest attaching to the unusual volcanic formations is added the never-failing charm of exploration. The three peaks composing the group lie close together, their dark, rugged summits encircled by glaciers of considerable magnitude. The Middle Sister, the most accessible and hospitable, boasts quite an enrollment of visitors; the South Sister, highest of the group, a little over 10,000 feet, shows scattering records of ascents during the last ten years, numbering perhaps not more than a score until our party went to augment the roll. But the North Sister, a black, wicked-looking mountain, could show only two names on one of the three pinnacles comprising its summit, and it was not until last summer that records were placed on all of its crumbling crags. The following letter from Mr. H. H. Prouty of Portland, Oregon, describes the hazardous climb that he alone of our entire party was able to negotiate without the assistance of a rope:

"Having reached the summit of the Middle Sister shortly after 9:00 A. M., I determined to go over and explore the North Sister. It was fast and easy going down the north slope of the Middle Sister, across steep slides and snowfields in good condition for running or sliding. The head of the great Collier Glacier was crossed easily. From this point a narrow ridge ascends steeply to the base of the highest peak of the North Sister. In its first stages this was good climbing, but the last half was very badly broken, and required some ticklish work over high and very narrow pinnacles or around the steep sides of sheer cliffs. Now I was at the foot of the last peak. In front, facing south, was a broken wall of stone, perpendicular for probably a hundred feet. I studied this for some moments and tried climbing a few feet, soon giving it up as too dangerous on account of the loose rocks. On the east it was many times worse. The cliffs here extended down many hundreds, perhaps thousands, of feet, perpendicular both above and below me. Then I tried west, going down the steep slide at the cliff's base, then climbing northerly along the west side to the snowfield we had seen from camp. This was too steep and hard to cross without an ice pick, but was passed by climbing around the edge and over the top between the rock-wall and the snow. A little farther north and I began to look up again. I could see a chimney above that seemed the only possible way of attaining the summit, but below it was a very difficult climb. I gave it up at the first trial, but after determining there was no other feasible route I tried again and made it. Then came some more steep slide rock, seventy-five or a hundred feet of almost straight-up chimney work, and then, at 12:33, I was on the summit. There are two high points to this peak, apparently of equal height, both of which I reached easily once up the chimney. Returning, I went down the west side some distance, crossed a deep gorge to the north, and climbed to the north peak, which is seventy-five or a hundred feet lower than the other, I should judge. Here I found the record of R. L. Glisan and W. H. Loomis, made July 20, 1903, stating that at this point they were compelled to descend on account of the approach of a thunder-storm. I found no records on the other summits. Went home via the northwest ridge and reached Camp Riddell at 4:07."

Mr. Prouty last summer placed the Mazama box on Broken Top, a peak to the southeast of the Sisters, also, and later made a second ascent of the North Sister, guiding a party of six. An account of the 1903 ascent is published in Vol. 2, No. 4, of the *Mazama Bulletin.*

NATIONAL PARKS.

REPORT OF THE SUPERINTENDENT OF THE MOUNT RAINIER NATIONAL PARK.

ROADS AND TRAILS.

The government road, built by the Engineer Corps, United States Army, is now practically completed from the western boundary of the Rainier National Forest to a point beyond Camp of the Clouds in Paradise Valley, a distance of approximately twenty-five miles. The road has been carefully located and a grade not exceeding 4 per cent obtained. The construction of this road is a very creditable piece of engineering and has been under the immediate supervision of Mr. Eugene Ricksecker, Assistant United States Engineer. Mr. Ricksecker has been particular to see that the road passed all points of interest, and it is said to be one of the finest scenic roads in America.

The total number of visitors known to have entered the park this season to date is 7,754.

The summit of Mount Rainier was reached by 159 persons during the season just passed.

REPORT OF THE ACTING SUPERINTENDENT OF THE YOSEMITE NATIONAL PARK, 1910.

It seems to be not generally known that Yosemite Valley is open to travel all the year round, and that, while it is impracticable because of the snow to ascend any of the trails up to the rim of the valley, the principal roads are passable.

PATENTED LANDS.

There are approximately 20,000 acres of timber and homestead claims in the park, and I cannot urge too strongly the need of action looking toward the acquisition by the Government of all these patented lands.

The Sugar Pine Lumber Company, which formerly was operating forty miles south of the Yosemite National Park, is now cutting timber within three-quarters of a mile of the southern boundary, and the mountains are rapidly being denuded of all timber. This is what will happen to the timber upon all the patented lands within the limits of the park in a very short time unless they are purchased by the Government and all private rights extinguished. This is a matter which needs urgent attention and should no longer be neglected.

GOVERNMENT ROADS.

The El Portal-Yosemite Village road is the main highway into the park, and travel over it was made fairly comfortable this season by the installation of a water-sprinkling system. This system has not been quite faultless, due to an insufficient number of water stations, but the defect is recognized and the remedy found, and it will be applied early next season.

TRAILS.

All the important trails exterior to the Yosemite Valley have been repaired and those from Tamarack Flat to Aspen Valley and from the Hetch Hetchy Valley to Lake Eleanor have been materially shortened and improved. A large number of guide signs on many of these trails were put up.

An allotment was made for the construction of a new trail from above Mirror Lake to Lake Tenaya, and the trail has been completed nearly to the top of the cliff in Tenaya Canyon, all the most difficult work having been finished.

It will not be practicable to finish this trail this fall, but the unfinished portion will be easy and admit of rapid progress, so that it will be open for travel early next season and will provide a most attractive trip.

All the old trails leading up from the floor of the valley to the rim, about twenty-four miles total, are subjected every year to heavy travel and the wear and tear on them is great. They were all kept in good condition, but it required constant labor.

HOTELS AND CAMPS.

There is only one hotel in the Yosemite Valley, and it was built years ago for summer use only, possesses few conveniences, and does not even admit of being remodeled to advantage.

A new hotel in a different locality is an urgent need of the park. Mr. Frank A. Miller, whose application for the privilege of building a new hotel in the valley was approved several years ago, seems to have abandoned the enterprise.

RECOMMENDATIONS.

It is recommended: 1. That the water system and power plant be enlarged and increased; 2. That ample hotel accommodations be provided; 3. That all patented lands in the park be condemned and purchased by the Government; 4. That an appropriation be obtained for the construction of a road from Fort Monroe to Glacier Point along the south rim of the valley (when built it will be for its length one of the most remarkable mountain scenic roads in the world; the survey, location, and all other practical means of preserving their wild grandeur from human desecration; "specimens of the best of nature's treasures have been lovingly gathered here and arranged in simple, systematic beauty within regular bounds."

Of the national parks that have been created by congressional action, the following are entitled to rank as worthy of being called national institutions: The Yellowstone, the Yosemite, the Sequoia, the General Grant, the Mount Rainier, the Crater Lake, the Glacier, the Mesa Verde, and there should be added the Grand Cañon of the Colorado, for the creation of which a bill is now pending in Congress. The areas of these and other parks, together with dates of establishment, are shown in the following table:

Date of Establishment and Area of National Parks.

	Date of establishment.	Area.
		Acres.
Yellowstone in Wyoming, Montana, and Idaho.	Mar. 1, 1872	2,142,720.00
Yosemite, in California	Oct. 1, 1890	719,622.00
Sequoia, in California	Sept. 25, 1890	161,597.00
General Grant, in California	Oct. 1, 1890	2,536.00
Mount Rainier, in Washington	Mar. 2, 1899	207,360.00
Crater Lake, in Oregon	May 22, 1902	159,360.00
Wind Cave, in South Dakota	Jan. 9, 1903	10,522.00
Sullys Hill, in North Dakota	Apr. 27, 1904	780.00
Platt, in Oklahoma	July 1, 1902 Apr. 21, 1904	848.22
Casa Grande Ruin, in Arizona	Mar. 2, 1889	480.00
Mesa Verde, in Colorado	June 29, 1906	42,376.00
(Five-mile strip for protection of ruins)	do.	175,360.00
Hot Springs Reservation, in Arkansas	June 16, 1880	911.63
Glacier, in Montana	May 11, 1910	981,681.00
Total	....	4,606,153.85

The interest of the public in the parks has been greatly augmented of recent years, as is evidenced by the increased amount of travel thereto and the many demands for literature relating to these reservations. The interest in these national parks is not confined to the people of the United States, but extends to foreign countries. The Swiss Government, at its request, has been supplied with reports of the superintendents in charge and laws and regulations governing the various national parks. Similar information has been furnished the forestry branch of the department of the interior of Canada; also the Verein Naturschutzpark of Stuttgart, Germany, an association the object of which is the establishment of parks or reservations for the preservation and protection of the game, fauna, and flora of Germany and Austria, to be modeled after the Yellowstone National Park, though on a smaller scale. Information on the subject of the Yellowstone Park in particular has been furnished the superintendent of the New Zealand tourist and health resorts, the United States consul at Sydney, New South Wales, for the information of the secretary of national parks in that country, and the secretary of the Royal Geographic Society of Australasia at Melbourne, Victoria.

In view of the facility of reaching our national parks from the Atlantic and Middle West States, through improved rail connections, and the convenience of travel by tourists through them, which is being rapidly improved, the comment is a natural one, "Why do so many of our American people spend their time and money touring abroad without knowing their own country?" The scenery and natural wonders found in other countries frequented by our people are insignificant compared with that of our great national parks and the mountain ranges in which they are found.

It has been broadly estimated that over $100,000,000 has been spent in some years abroad by American tourists; only a fraction of this amount is spent by Americans in visiting the great American parks and resorts.

One of the advantages of popularizing the national parks by eastern tourists would be the display of greater interest in their improvement by Congress, in liberal appropriations to increase their accessibility by roads and other establishments for public convenience and pleasure.

The Wind Cave National Park, containing 10,522 acres; Sullys Hill National Park, containing 780 acres, and Platt National Park of 848.22 acres, created by Congress at different times, may be said to be local parks having no sufficient national characteristics to warrant their development as such. The policy should be, in my estimation, to retain none of the national parks heretofore dedicated which will not warrant development as national institutions as distinguished from municipal or state parks or resorts. If it is desired that they be retained for public purposes and so improved, I would recommend that they be conveyed to the States for that purpose.

As regards the national parks which have been created and are capable of development as national institutions, a definite policy for their maintenance, supervision, and improvement should be established, which would enable them to be gradually opened up for the convenience and comfort of tourists and campers and for the careful preservation of their natural features. Complete and comprehensive plans for roads, trails, telegraph and telephone lines, sewer and water systems, hotel accommodations, transportation, and other conveniences should be made for each of the national parks before any large amount of money is expended. The treatment of our national parks, except as regards the Yellowstone, has not had heretofore the benefit of any well-considered or systematic plans. In all of them the road and trail problems for public travel and convenience to enable tourists to obtain the benefits of scenic beauties are primary, but sewage, water, and electric-power problems are after all of equal importance.

The patrol of the national parks is also a matter of prime importance in their supervision. The system of maintaining regular troops in the Yellowstone, Yosemite, Sequoia, and General Grant parks has proved entirely satisfactory as a method of patrol. The moral effect of the troops in protecting against malicious mischief and enforcing regulations, and the saving of expense in administration by their use, justify their assignment. I believe, however, that civilian superintendents should have charge of the administrative government of all of the national parks, with military supervision confined to the enforcement of regulations pertaining to public travel and preservation of game and natural curiosities. Outside of the Yellowstone National Park the administration of all of the parks is embarrassed by the fact that they contain within their bounds certain areas of private lands, which should be acquired by the Government, and all private interests, including toll-roads, extinguished. The private holdings are as follows: Yosemite National Park, 19,827 acres; Sequoia National Park, 3,716.96 acres; Wind Cave National Park, 160 acres; Crater Lake National Park, 1,337 acres patented land, and 1,121.11 acres unperfected bona fide claims; Mesa Verde National Park, 400 acres patented lands and 480 acres unperfected bona fide claims; Mount Rainier National Park, 18.2 acres patented lands; Glacier National Park, 8,864.40 acres patented lands and 7,803.71 acres unperfected bona fide claims.

In order that creditable progress may be made in each of the national parks, after the development of all necessary plans for road and other construction for the convenience of travel and tourists, liberal appropriations will be required and a departmental organization for administrative purposes perfected, capable of efficient field administration and of careful inspection of all public work and the conduct of concessionaires. It will doubtless be necessary in the accomplishment of these purposes to create a bureau of national parks and resorts, under the supervision of a competent commissioner, with a suitable force of superintendents, supervising engineers, and landscape architects, inspectors, park guards, and other employees.

The creation of such a bureau and the planning under it of a consistent and broadly considered scheme for national parks and resorts to fit the future needs of the United States of America would be in line with the policy under which our first president planned, in 1803, the federal city which now bears his name, without which planning no such civic convenience, beauty, impressiveness, and national dignity as the city of Washington now enjoys would have been possible.

The volume and importance of the work of the supervision of the national parks and resorts under the Secretary of the Interior has passed beyond the stage of satisfactory control by operations carried on with the small force available in the secretary's office.

Additional road construction is greatly needed in the Yosemite, Sequoia, and General Grant national parks, in California; Mount Rainier National Park, in Washington; Crater Lake National Park, in Oregon; and the Mesa Verde National Park, in Colorado. A carefully planned sewer system is necessary in the Yosemite National Park, as well as increased water and electric power facilities.

During the past year a uniform method of accounting relating to concessionaires in all of the parks has been established and a material increase made in the receipts for the privileges enjoyed by them. It is worthy of comment that the receipts for 1910, in round numbers, were $51,000, as against $22,000 in 1909.

In all of the parks, except the Yellowstone, great difficulty of administration is encountered from the fact that the department has no jurisdiction to punish offenses in violation of its regulations, and I therefore recommend that jurisdiction be given to the department over all offenses, with a provision of suitable penalties for the violation of the regulations of the department, for the protection of game, and to prevent destruction or injury to government property.

In the Mount Rainier, Crater Lake, General Grant, and Wind Cave national parks automobiles have been allowed entrance under license and strict regulations pertaining to travel upon the roads. It is believed that in a measure this privilege may be extended to some of the other national parks without jeopardy to the traveling public.

In some of the national parks mining locations are permitted, but the tendency is to abuse the privilege in order to secure rights which will ultimately have to be bought out by the Government. The department is now exercising the strictest vigilance to prevent speculative locations from ripening into patent or a vested right.

I believe that in the administration of our national parks it may be feasible to use for guides, and possibly for guards in a limited sense, intelligent Indians, and an effort will be made to give them such employment where they can be used to advantage.

The following table shows the number of visitors entering the national parks and resorts during the last five years:

Visitors to National Parks, 1906 to 1910.

Name of Park.	1906.	1907.	1908.	1909.	1910.
Yellowstone National Park	17,182	16,414	19,542	32,545	19,575
Yosemite National Park	5,414	7,102	8,850	13,182	13,619
Sequoia National Park	700	900	1,251	854	2,407
General Grant National Park	900	1,100	1,773	798	1,178
Mount Rainier National Park	1,786	2,068	3,511	5,968	8,000
Mesa Verde National Park	(*a*)	(*a*)	80	165	250
Crater Lake National Park	1,800	2,600	5,275	4,171	5,000
Wind Cave National Park	2,887	2,751	3,171	3,216	3,387
Platt National Park	(*a*)	28,000	26,000	25,000	[b]25,000
Sullys Hill National Park	(*a*)	400	250	190	190
Hot Springs Reservation	(*a*)	(*a*)	(*a*)	(*a*)	120,143

[a] No record kept. [b] Estimate.

HETCH HETCHY VALLEY PERMIT.

In February of this year I issued a citation to the mayor and supervisors of the City and County of San Francisco to show cause why the Hetch Hetchy Valley and reservoir site should not be eliminated from the permit theretofore granted to the city on the 11th day of May, 1908, for a water supply for said city and county. A board of army engineers, at my request, was detailed by the Secretary of War, at your instance, as advisory to the Secretary of the Interior in the disposition of this question. Upon considering the application of the city for the extension of time to secure further data, a continuance was granted for this purpose for one year, and the board of engineers was authorized to receive such data as may be furnished by the city to establish its claim for the necessity of the use of the Hetch Hetchy site and to secure such other necessary data as they may deem advisable. An appropriation in the sum of $12,000 was granted by Congress to defray the expenses of this board. The details of this hearing are fully set out in the published proceedings had before the Secretary of the Interior in May, 1910.—*From Annual Report of Secretary of the Interior for Year 1910.*

SIERRA CLUB STATIONERY.

The official die of the Sierra Club is now at the store of Paul Elder & Co., 239 Grant Avenue, San Francisco, who are prepared to execute orders for Club stationery.

TROUT PLANTING.

The following correspondence gives evidence of the important work that has recently been accomplished in the High Sierra in the planting of trout in fishless lakes and streams. The Club took up this work several years ago, realizing its value, and it is deeply indebted to the California Fish and Game Commission for most effective co-operation. In a very few years the regions planted will become a veritable "fisherman's paradise." Members of the Club and all lovers of sport are urged to refrain for a period of three years from fishing in the lakes and streams noted as having been planted this past year.—The Editors.

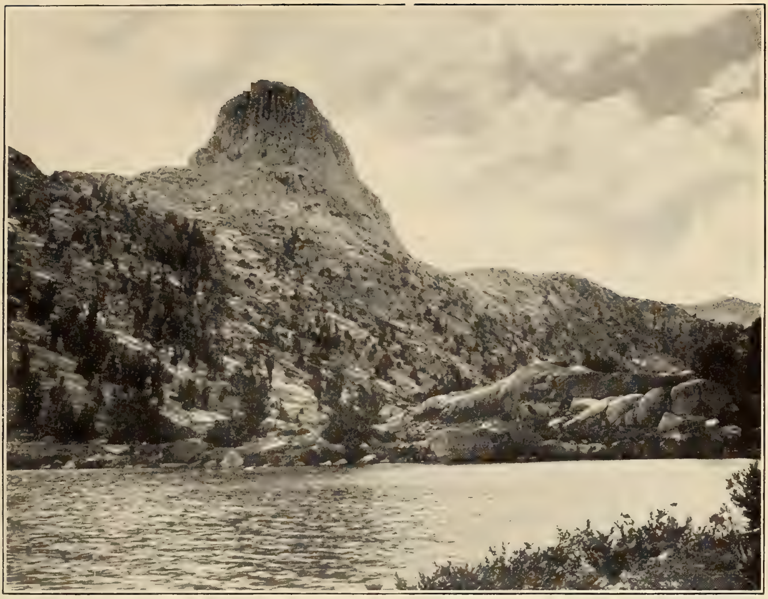
Transplanting Adult Trout in the Southern Sierras.

During the past two years special attention has been given to stocking barren lakes and streams on both sides of the higher Sierras in Inyo, Tulare, Kern, and Fresno counties with adult fishes—golden, Kern River rainbow, and Loch Leven trout. The two last-named varieties were taken from waters that had been stocked some years before with fry raised at our Sisson Hatchery and which had been transported as far inland as it could be done with safety. The golden and Kern River trout were taken from streams where they are abundant and placed in other waters barren of fish life in the same general locality.

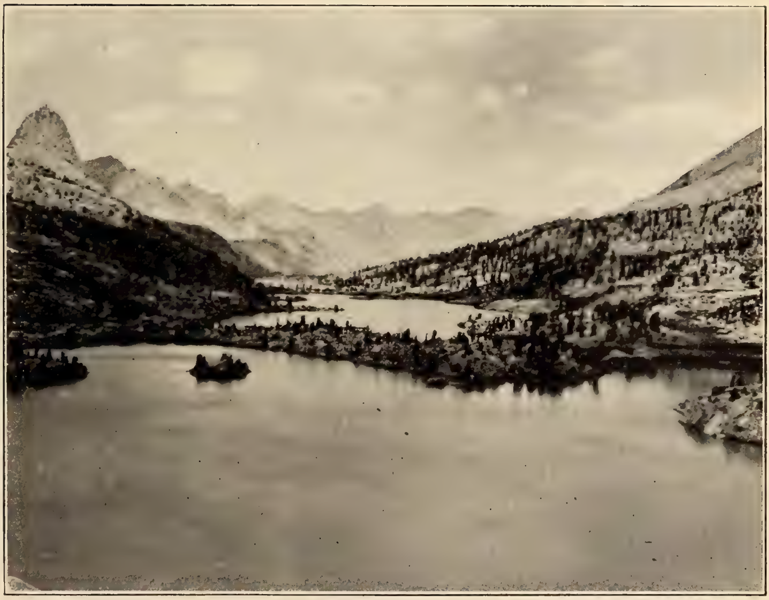
The sum of $1,250.00 was appropriated for the work, which enabled us to equip two pack trains with specially built cans, and other necessary apparatus. Deputy E. H. Ober, assisted by Sheriff Naylor of Inyo County, had charge of the work on the eastern slope, and in the face of many difficulties successfully transferred a large number of golden trout into waters heretofore barren of fish life, but rich in fish food.

District Deputy A. D. Ferguson of Fresno, assisted by Deputy S. L. N. Ellis, directed the pack train work in 1909 and 1910 in the Kern River, Kings, and Kaweah basins on the western slope. Adult golden trout were captured in very satisfactory numbers and successfully transported and planted into Crabtree Fork of Big Kern, North Fork of Kaweah River, and Whitney Creek. Adult rainbow trout were planted in four tributaries of Sugar Loaf Creek and other tributaries to Kings River in 1909. In 1910 Huckleberry Ellen and Spotted Fawn lakes, in Tuolumne County, received 1,400 adult rainbow trout. Adult Loch Leven trout were placed in Rock Creek; Loch Leven fry in eighteen cans distributed by pack trains in Pitman, Coyote, Red Mountain Bear, Shaver, and seven Dinkey lakes.

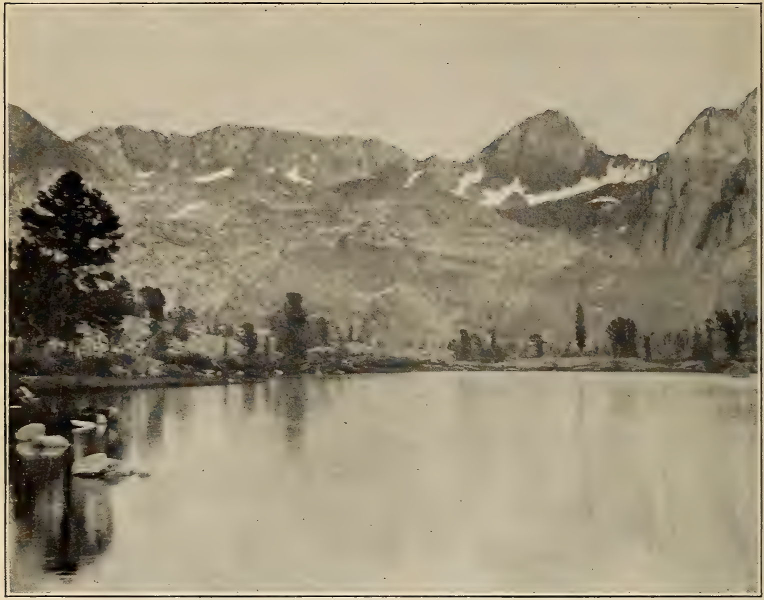
Adult rainbow trout were taken and distributed in considerable numbers into South Fork of the San Joaquin above Jackass



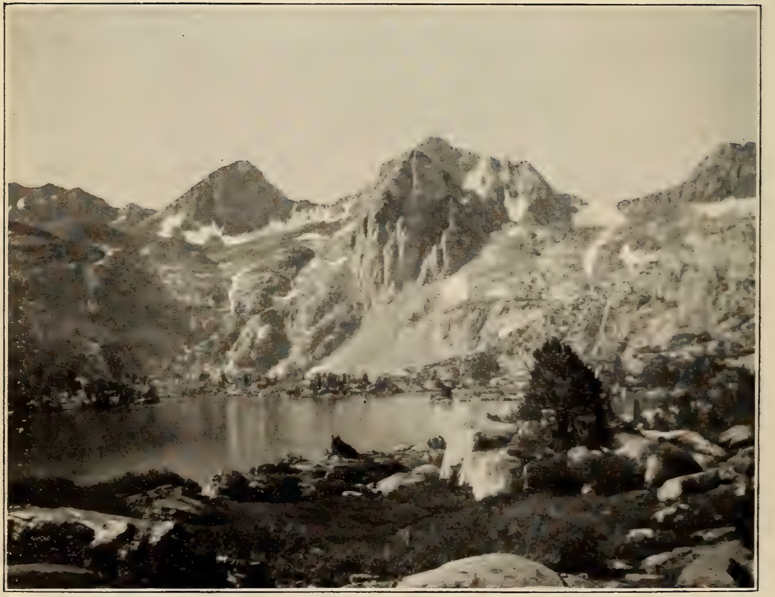
FIN DOME FROM RAE LAKE, 1910.
Photograph by C. W. Pohlman.



RAE LAKE IS CHARMINGLY DIVERSIFIED BY PENINSULAS AND ISLANDS, 1910.
Photograph by H. E. Bailey.



COLORED LADY FROM RAE LAKE, 1910.
Photograph by Mabel Sykes.



THE MASSIVE MAJESTY OF SNOW-CAPPED PEAKS, RAE LAKE, 1910.
Photograph by H. E. Bailey.

Falls and four other headwater tributaries of the same stream. Sixteen tributaries of the Kings River, including lakes and streams in Granite Basin, received liberal plants of adult fish. All are ideal trout waters, but heretofore barren of fish life. It is confidently believed that this vast region will in a few years become a fisherman's paradise.

Much credit is due to the officers and members of the Sierra Club, who, under the skillful directions of Secretary Wm. E. Colby, have at their own expense, but under the authorization of this Board, successfully transplanted during the past two years more than 400 adult golden trout in the vicinity of Mount Whitney.

In July and August, 1910, more than 1,800 large golden trout of the two varieties were taken with hook and line by our deputies and distributed among twenty-three lakes and streams in which no fish have heretofore existed. In suitable places—meadow streams—seines were used to take the fish, but by far the larger number were taken with hook and line.

Some idea of the arduous character of the work is shown by the plants made in Deadman's Cañon, which occupied six days of pack-horse travel over a very rough country. The fish were true type, *Salmo Roosevelti,* taken with seine at Whitney Meadows and planted with the remarkably low loss percentage of six fish out of 183, all adults.—*Twenty-first Biennial Report of the Board of Fish and Game Commissioners of the State of California, 1910.*

San Francisco, September 8, 1910.

Honorable Board of Commissioners,
California Fish and Game Commission,
Merchants Exchange Bldg., San Francisco.

Gentlemen: I desire to express to your Honorable Board, on behalf of the Sierra Club, our very great appreciation of the splendid work which has been done in the field by your representatives this year toward the planting of hitherto fishless lakes and streams in the High Sierra region. We have been especially interested in seeing the golden trout spread over a considerable territory, and we are particularly pleased to learn of the splendid work that Mr. Ellis has done in the Kern River region, under the direction of Mr. Ferguson.

I have already had some correspondence with your deputies with reference to one additional planting which we are very anxious should be made. This is to take golden trout from Golden Trout Creek at Whitney Meadows and plant them in the branch of the South Fork of the Kings River just below Center Basin, a stream which we examined this year and found admirably adapted to fish life, and one in which I think the golden trout will retain all their wonderful color, because of its similarity to their native stream. While this plant is being made, I think it would be a comparatively easy matter to also have some of these golden trout taken over Taboose Pass and planted in some of the lakes and streams about the headwaters of the main South Fork of the Kings River. If your Commission will authorize Mr. Ober to do this work, I feel sure that he will be only too glad to undertake it. Our Club has promised to assist in a financial way, but the funds at our disposal are very meager indeed and would only pay a small part of the cost of the work. Our Club will appreciate it if you will authorize this to be done at once, as the season will not long permit the necessary crossing of the mountains.

Assuring your honorable body that our Club stands ready at all times to assist you in your splendid work of stocking the lakes and streams of the High Sierra, I remain,

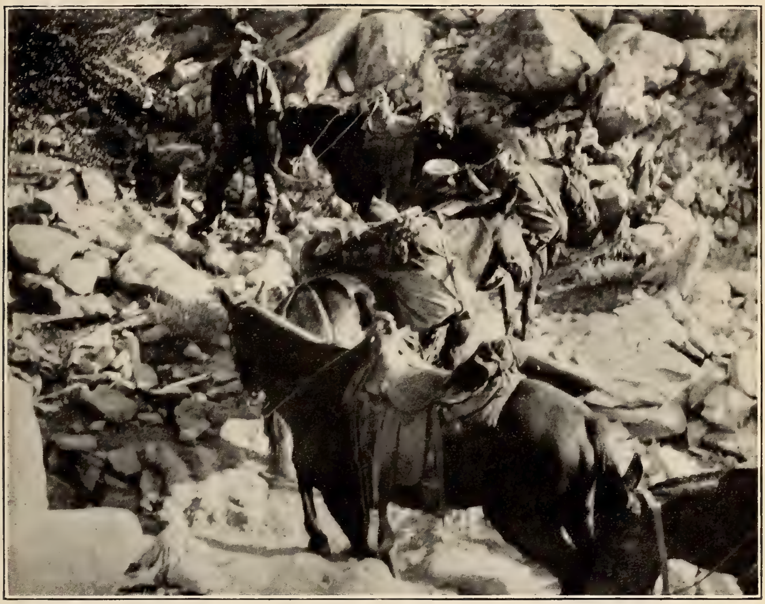
Very truly yours, WM. E. COLBY.

BIG PINE, INYO COUNTY, CAL., October 4, 1910.

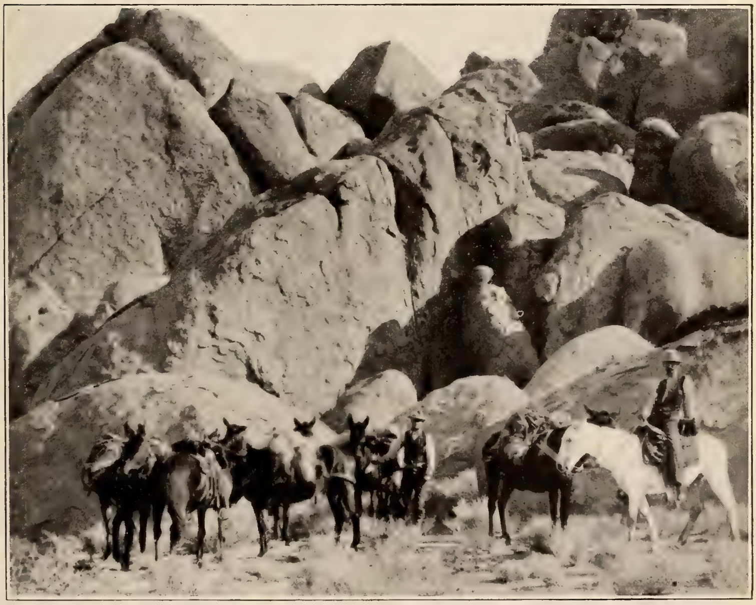
WM. E. COLBY,
Secretary Sierra Club, San Francisco, Cal.

My Dear Sir:—I beg herewith to submit for your consideration a condensed report of my trip to Volcano Creek, the securing there of a quantity of *Salmo Roosevelti* (golden trout) and the planting of the same in accordance with plans outlined by your Club and the State Fish and Game Commission in the waters of Center Basin, Bench Lake, and the South Fork of Kings River.

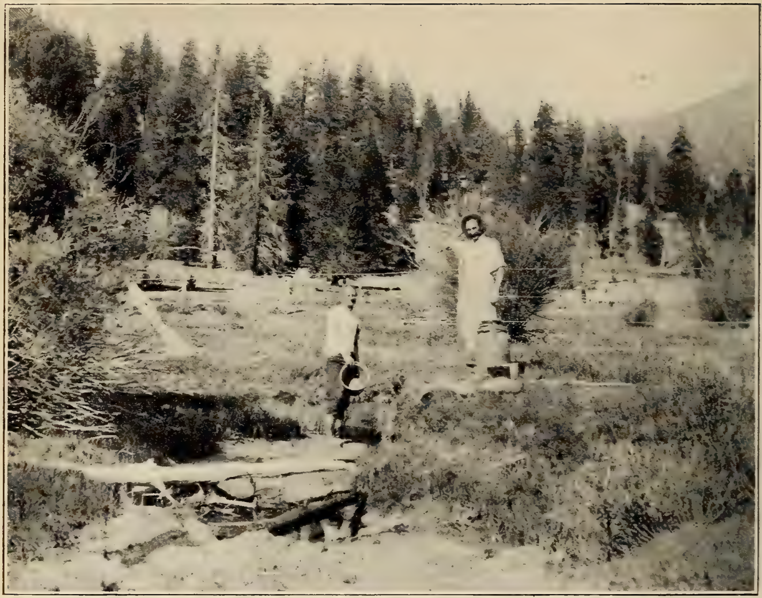
I cannot resist the temptation of prefacing this report with a few words of merited praise for your Sierra Club and its ever willing co-operation with that prime achiever of results, the State Game and Fish Commission. I plead guilty to a modicum of prejudice of opinion, but I honestly believe that there is no enterprise or working body or commission in our State that is in a better position to do, or that actually does accomplish more of real good for the people than does our Fish and Game Commission, ably assisted, however, by your Sierra Club and other organizations who make trips into the High Sierras each year and take interest in the stocking of heretofore fishless waters; this one feature, aside from your deep interest in the National forests should be and is taken as evidence of your endeavor toward the upbuilding of that which will in the future years inure to the good and welfare of the people and of the country. It is pleasant to feel that in the Sierra Club, at least, we have a



DEVIL'S SLIDE NEAR LITTLE COTTONWOOD, HOCKETT TRAIL, 1910.



NIGGER TRAIL ROUTE TO INDEPENDENCE.
Photographs by Geo. W. Hall.



HEADWATERS OF GOLDEN TROUT CREEK, 1910.

NEAR KEARSARGE PASS, 1910.
Photographs by Geo. W. Hall.

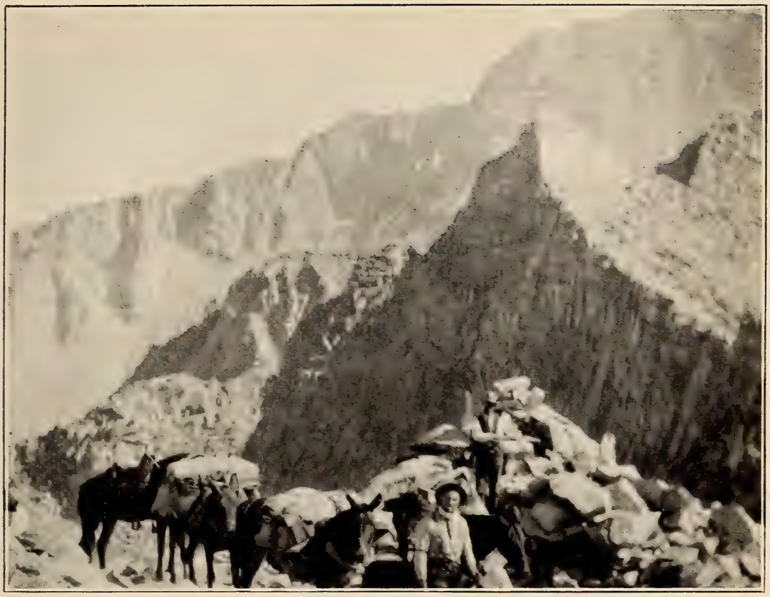
coadjutor that takes an active interest in what future generations will point to as work well done; every dollar that your Club expends in a work such as this must bring good results somewhere, sooner or later. Fish and game when properly understood and conserved become a valuable asset, both from a utilitarian standpoint and as an attraction to any community or country.

The State Fish and Game Commission is to be congratulated in having such an ally as the Sierra Club, an organization that takes an active interest in everything pertaining to the upbuilding of the fish and game interests of our great commonwealth, and in this respect your work and assistance cannot be overestimated. Let me thank you and your Club on behalf of the Commission and the people of Inyo County, both of which it is my honor to represent in this matter, for your kind and thoughtful consideration of this section; Inyo County is fast becoming noted for its sporting facilities and more people resort here annually for the fishing and hunting; in the near future, when the railroad from the south connects with us, we expect to see a still larger yearly influx of pleasure seekers and campers who will avail themselves of the many unsurpassed opportunities and natural facilities here.

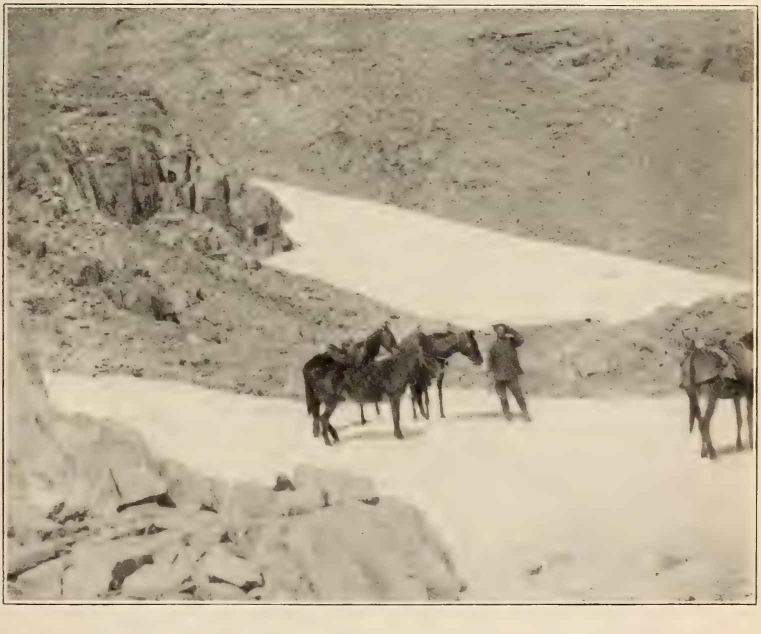
On my trip for the golden trout I had with me excellent assistants in Mr. S. G. McMurry and Mr. Geo. W. Hall, both of this place. Our outfit consisted of four pack mules and three saddle horses. The fish were packed in four ten-gallon milk cans and our start was made from Big Pine on the morning of September 19th under perfect conditions. We reached Independence, twenty-eight miles south, on the evening of the same day and outfitted there for the trip. At this particular time of the year, especially in the high altitudes, the forage for stock is rather meager and we found it necessary to pack one mule with grain. On the morning of the 20th we left Independence after getting some of our stock shod and passed through Lone Pine, stopping there for lunch. I desire to state here that we paid each town along our route the courtesy of our patronage, so far as possible. The night of the 20th we lit our first camp-fire at the Lubkin ranch, eight miles southwest of Lone Pine; on the morning of the 21st, at 6:00 A. M., we started over the Hockett trail, arriving at Volcano Creek at 6:30 P. M., after a very rigorous and hard trip on both stock and men. The Hockett trail is by no means a good one, and seems to me to have been built in a place where the Almighty never intended that there should be a trail, but had neglected to advertise the fact.

On the morning of the 22d we proceeded to turn a small portion of Volcano Creek. In this some little difficulty was experienced, but after some quick and hard work along with a good ducking for all of us the task was accomplished. By turning the stream in this fashion one may select the deep pools, bale them out with a bucket and in this manner one is enabled to secure just the desired size of stock fish. My selection of fish were from two to five inches in length, and we took in all about 750. Screens were placed over the cans and for the night the cans rested in the creek. The obstruction in the creek consisted of ten sacks of sand, a large canvas and a hat and one rubber boot, belonging to one of my assistants. When these were removed the little stream of Volcano Creek pursued its accustomed course as though there had been no molestation. Golden trout in this particular branch are in evidence in countless numbers, but as a rule they are rather small. I shall make no attempt, except in a brief way, at this time to speak of the geological formation around and about Volcano Creek. However, I examined the sand, pebbles and rock in the creek bed and found the sand to be of a fine grained gray granite mixed with a cement or limestone. The entire Volcano Creek passes over thousands of red malapai stones of small size; the source of the stream is a subterranean channel of clear, cold water of about 300 inches; the formation, as a whole, surrounding this particular section, for quite a distance south and east, is of a peculiar calico-tinted conglomeration in which red predominates. Stratas of conglomerates and quartzite may also be seen, apparently the only sedimentary rock formed before the uplift took place in that locality. There are a great many people throughout the country who are of the opinion that the golden trout will change color in environments other than those to which they are native, and this transplanting should either verify or dispel that conception, as the surrounding colors and formations where the fish were placed are as diametrically different as could be imagined.

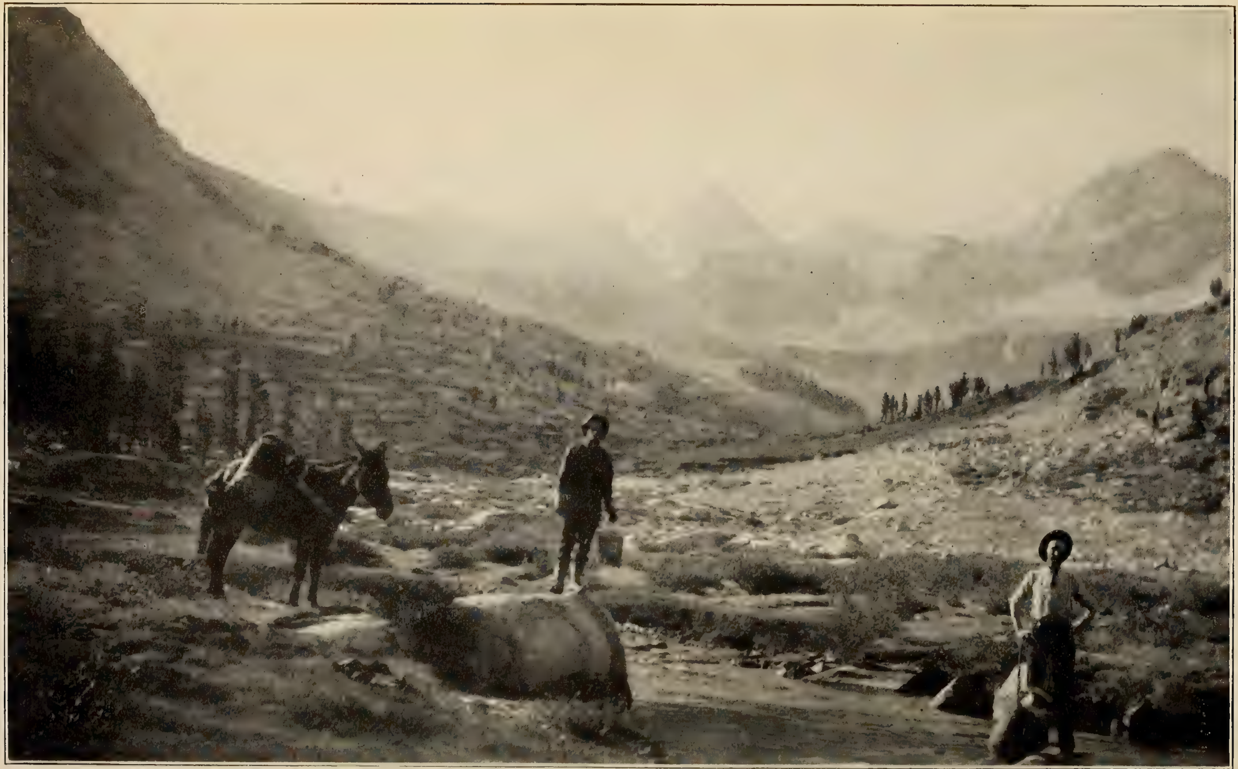
On the 23d instant, at 6:20 A. M., we left Volcano Creek on our return trip and stopped for a late lunch and to rest the fish at Big Cottonwood Creek. From here we proceeded to Carroll Creek, a small stream of clear, cold water at the base of the mountain on the east side and where the Hockett trail leading toward Monache begins; we camped here for the night, and upon looking into the cans the next morning we found three small dead fish, which had in all probability been bruised in the catching the day before. We left Carroll Creek at 5:30 A. M. and arrived at Independence at 3:00 P. M. of September 24th, and stayed there for the night. On our journey to Independence we



CROSSING KEARSARGE PASS, 1910.



CROSSING TABOOSE PASS, 1910.
Photographs by Geo. W. Hall.



NEAR CENTER BASIN AT BASE OF CENTER PEAK, JUNCTION PEAK IN DISTANCE, 1910.

Photograph by Geo. W. Hall.

kept close to the base of the mountains so that we could frequently cross the various streams that flow clear, cold water and in this way avoided the necessity of packing ice. Again we saved eight or ten miles of travel by leaving Lone Pine to the east and traveling what is commonly known as the "Nigger" trail.

At Independence we unloaded our fish at the courthouse, where Sheriff George Naylor had made excellent arrangements for the keeping of the fish. The sheriff and his deputies commanded our sincere gratitude for the able and willing assistance furnished our expedition by them.

We left Independence on the morning of the 25th at 7:30 A. M. for Center Basin, over the Kearsarge Pass, leaving one mule and two cans of fish at Independence. We stopped for a short rest at Flower Lake, well up toward the summit of the pass; continuing we arrived at Vidette Meadows at 6:15 P. M. with no further loss of fish. On the morning of the 26th, at 5:20 A. M., we loaded the fish upon one of the mules and made our start for Center Basin. In the creek well up toward the basin we made eleven plants all told, as indicated on the map that I am returning to you. We used about 400 of the fish in these eleven plantings. Directly the little fellows were liberated they got busy catching the several different flies and bugs that chanced to fall upon the water, thus showing that they were both in good order and spirits, and hungry. They had attempted to eat some of the very few that were dead in the cans.

After finishing our planting at Center Basin we returned to camp, repacked and started for Independence, arriving there at 6:00 P. M. On the morning of the 27th, at 7:00 A. M., we picked up the cans left at Independence and proceeded up Taboose Creek, camping that night near the summit line with a loss of five small fish. On the morning of the 28th, at 5:30, we left for Bench Lake and the headwaters of the South Fork of Kings River. In these waters we made eight plantings, five in the river and three in the lakes, as is also indicated on the maps.

On the morning of the 29th we started for home, arriving at 8:00 o'clock P. M., thus ending one of the most successful fish planting expeditions that has ever been attempted in this section. We feel like assuming a little extra credit to ourselves for the success of our expedition from the fact that the undertaking contemplated necessitated the crossing of three Sierra summits, the traversing portions of Inyo, Tulare, and Fresno counties, and the covering of more than 248 miles, and the keeping and caring for some of the fish for a period of eight days after they were caught and placed in the cans. My loss on the entire trip would not reach fifteen fish out of the 750 or upwards. The trip was accomplished with never a slip backward, due largely to the efficiency of my two assistants, men who understand the exact carrying out of instructions. Our efforts during the entire trip were directed toward the incurring of no unnecessary expense, looking always toward the completion of the work as thoroughly and quickly as possible and in this respect I think that we have made good. Trusting that the knowledge that this work has been thoroughly and well done may afford yourself and the Sierra Club an equal degree of satisfaction with that we have derived from its accomplishment in such manner, I beg to subscribe myself, Most sincerely yours,

E. H. OBER,

Deputy of California Fish and Game Commission.

BIG MEADOWS, August 26, 1910.

MR. W. E. COLBY,
Secretary Sierra Club,
San Francisco, Cal.

Dear Mr. Colby: I am back as far as this and am awaiting instructions from my superiors. I got the letter that you left at Rock Creek, but did not find it until the 18th of July,—in fact, not until I had taken a load of fish to the pass west of Junction Peak. I was not prepared to make the trip over, so I planted the fish at various points that were barren.

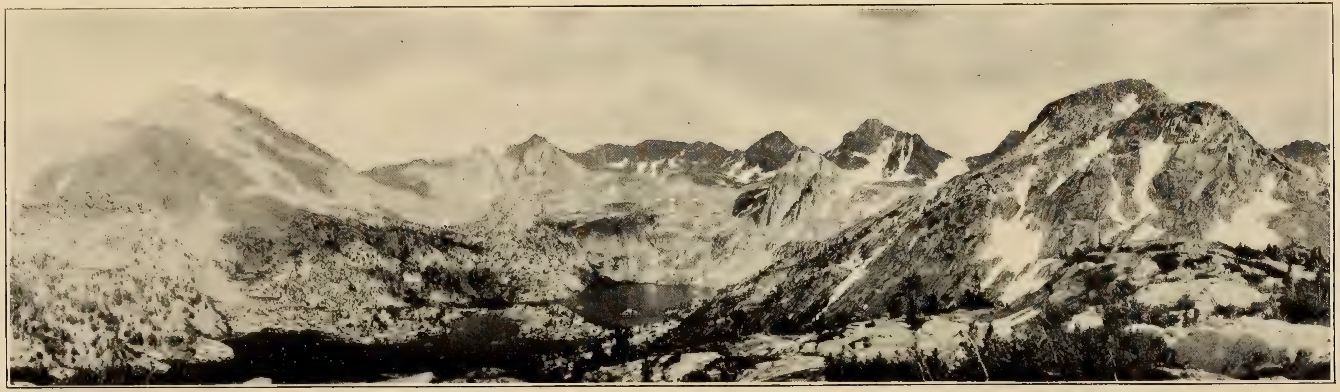
We continued planting until all streams south of Harrison Pass, on the east side of Kern, to Rock Creek were planted. We also planted several lakes. I have found from past experience that it is useless to plant a lake with golden or rainbow trout unless the lake has an inlet to serve as a spawning bed. The Loch Leven and German brown spawn in open, shallow water of lakes, but the other varieties must have running water. My work as outlined at the branch office did not permit me to go around via Lone Pine and Kearsarge Pass with fish for the Upper Bubbs Creek, so I sent your letter to Mr. Ober and asked him to help you out if possible.

We carried one hundred and thirty golden trout from Upper Whitney Meadows and released them in the head of the West Fork of Roaring River. We usually call the stream Deadman's Cañon, but the U. S. Quadrangle gives the name as Copper Cañon. We traveled via Elizabeth Pass. We also planted thirty trout at Lone Pine Meadows and fifteen in Lone Pine Creek above the falls.

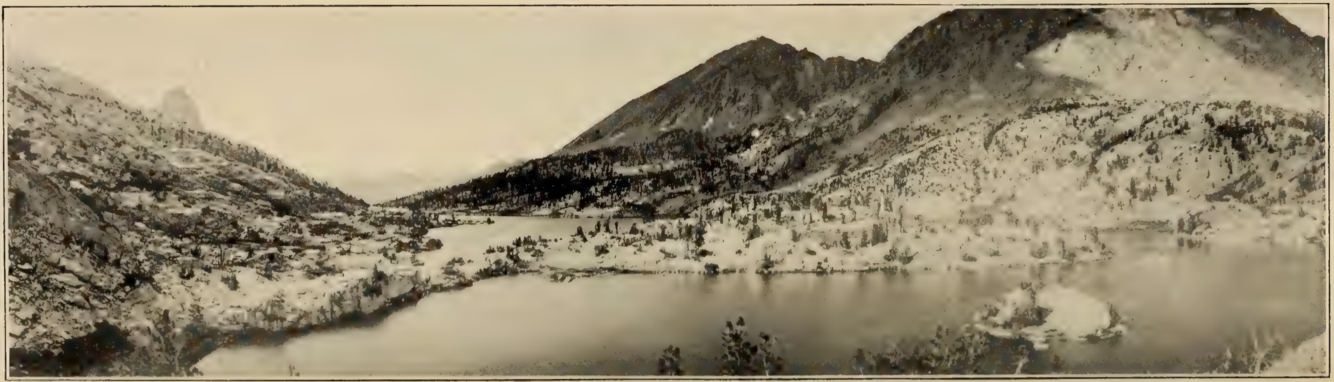
In another year I hope we can continue the work until all barren waters are stocked, and I wish to thank you for your in-

STEEP WALL RISING OUT OF BENCH LAKE, 1910.

ANOTHER VIEW OF BENCH LAKE, 1910.
Photographs by Geo. W. Hall.



RAE LAKE BASIN FROM FIN DOME RIDGE, 1910.



LOOKING DOWN RAE LAKE BASIN, 1910.
Photographs by E. T. Parsons.

terest and assistance given. I brought some of the trout from Little Kern and have two plants in streams near here.

I will probably be in the mountains a few weeks longer and then will be at Fresno. If it is of any interest to you I will arrange a map and forward it to you showing exactly where we planted golden trout.

Again thanking you kindly,

Very sincerely,

S. L. N. ELLIS.

FRESNO, January 18, 1911.

MR. W. E. COLBY,
Secretary Sierra Club, San Francisco, California.

Dear Mr. Colby: In reply to your letter of December 30th, inclosing maps:

I am now sending you a report of the work accomplished, also map showing the locations of the plants made with golden trout. The successful planting of Copper Cañon Creek is a source of great pleasure to me, for I've annually hoped to do that for the past ten or twelve years. This task took six days from the Upper Whitney Meadows and in climbing the mountain from Lone Pine Meadow up Lone Pine Creek, it took two hours and forty minutes to cover a distance of about one half of a mile. Nearly every pack mule fell with his load and we had to carry the cans ourselves. In my past summer's work I was assisted by two boys, E. C. Ferguson and Ray C. Ellis. They were ready and tireless in assisting me in the successful work.

The plant in Copper Cañon will furnish us an easy supply of golden trout to further distribute in the barren waters of Kings River, hence its great importance.

The past summer was not an ideal one for fish planting in the very high altitudes on account of the frequent and very hard summer storms.

We now have plants in easy reach of the unplanted waters of the Big Kern, and as soon as they multiply sufficiently to allow taking them, we hope to finish planting all barren waters east of Big Kern with golden trout.

I want to thank you, also the Sierra Club, for the keen interest manifested by you all in our work, and hope that our hopes and desires may all come true.

Very sincerely yours,

S. L. N. ELLIS,
Deputy Fish and Game Commissioner.

FRESNO, CAL., January 5, 1911.

MR. WILLIAM E. COLBY,
San Francisco, California.

My Dear Mr. Colby:—In response to your request of December 30th, I take pleasure in enclosing you tabulated list of golden trout plants, and also plants of rainbow, Loch Leven and Eastern brook trout made through this office during 1910.

In this connection, I wish to say that both Deputy Ellis and Deputy Hughes did splendid work. Much of the country they worked in was rough in the extreme. On Ellis's trip with golden trout for Cloudy River, or Deadman's Creek, he frequently had to cut a trail through brush and often had from one to three pack mules down because of the extremely bad going. In traveling on this trip he adopted a plan of keeping the fish on the pack mules but six hours a day, which probably accounts for his small losses.

I was with Deputy Hughes part of the time and can testify to the strenuous character of his labor. In one instance we were compelled to slide the loaded mules a hundred feet down a slick rock, in order to get to the North Fork of Kings River where we wished to make our plant.

This office will probably be able to continue the work until every stream and lake in our mountains shall have been stocked with desirable trout.

I understand from Deputy Ober of Inyo, that he had already reported to you his golden trout work.

Yours respectfully, A. D. FERGUSON,
In Charge, Branch Office.

TROUT PLANTS MADE DURING 1910 BY BRANCH OFFICE, SAN JOAQUIN AND KINGS RIVER WATERS.

June 10th—A. D. Ferguson in charge, field work—Loch Leven fry were released in Pitman Lake, Coyote Lake, Red Mt. Lake, South Fork San Joaquin watershed; Bear Creek Lake and seven other lakes connecting to Dinkey Creek.

June 14th—Kenneth Hughes in charge field work—Eight cans of Loch Leven and Eastern brook were released in Shaver Lake and streams tributary to the lake.

June 17th—Two cans, one Loch Leven and one Eastern brook, were released in Dinkey Creek near old Silver City.

June 18th—Two cans Eastern brook fry were released in Helm Creek, which is tributary to the North Fork Kings River.

June 20th—Rock Creek was stocked with adult Loch Levens taken from Dinkey Creek.

The following plants were made with adult rainbow in waters which were barren:

July 16th—Crown Creek, tributary Middle Fork Kings River; Dry Meadow Creek, Bear Creek.

July 24th—Head of Crown Creek, tributary Middle Fork Kings River; Statham Creek, tributary North Fork Kings River; Rancheria Creek, tributary North Fork Kings River.

July 26th—Head North Fork Kings River.

August 2d—Post Corral Creek, tributary North Fork Kings River.

August 10th—Blue Cañon Creek, tributary Middle Fork Kings River.

August 14th—Head of Dougherty Creek (Middle Kings waters).

August 15th—Cartridge Creek (Middle Kings waters).

August 16th—South Fork Dougherty Creek (Middle Kings waters).

August 16th—Middle Fork Dougherty Creek (Middle Kings waters).

August 16th—Lake at head of Granite Basin and Creek flowing from lake. South Fork Kings River waters.

August 21st—Head of Copper Creek (South Fork Kings waters).

September 3d—South Fork of San Joaquin River, above Jackass Falls.

September 4th—North Fork of South Fork of San Joaquin in French Cañon.

September 7th—Middle Fork of South Fork of the San Joaquin; this stream is sometimes called Evolution Creek.

Fry from the State Hatchery were delivered as follows:

June 16th—Fourteen cans at Lemon Cove to Widgeon Gun Club to release in the three forks of the Kaweah; twelve cans to Porterville Fish and Game Club, Tule River; twelve cans to Deer Creek Fish and Game Protective Association, to release in Kessing Creek and Deer Creek.

June 17th—Twelve cans fry to H. T. Dillon, Bakersfield, to Cedar Creek; four cans to R. E. Galloway, Bakersfield, to Basin Creek; four cans to Thos. O'Brien, Bakersfield, to Ft. Tejon Creek; four cans to A. F. Stner, Bakersfield, to San Emidio Creek.

Work was done by Deputy S. L. N. Ellis of the Branch (Fresno) Office Fish and Game Commission. A. D. F.

Golden trout plants during the months of July and August, 1910:

Stock taken with hook and line from Rock Creek, and eastern tributary to Big Kern.

July 16th—Guyot Creek and Perrin Creek, also 357 fish scattered in Rock Creek from the crossing on the Mt. Whitney trail eastward to lake where Mr. W. E. Colby made a plant two years ago.

July 19th—Small creek and lake south of the East Fork of Kern River and tributary to South Fork of East Fork Kern River.

Main East Fork of Kern River and about one mile north of where Harrison trail crosses the stream; this stream heads near the south slopes of Mt. Tyndall.

July 22d—Lake, near trail and between high sandy plateau and Tyndall Creek.

July 25th—Released 157 fish in Whitney Creek, between the Upper and Lower Crabtree Meadows.

July 26th—Lake near pass on western slopes of Tyndall Creek and east of divide which separates Tyndall Creek from head of Big Kern.

July 29th—Stream which connects to Whitney Creek at Lower Crabtree Meadows. This plant was made above the falls and near the lake.

July 30th—Both branches of Tyndall Creek, above junction of streams; also lake at foot of pass on Harrison Pass trail and between Tyndall Creek and head of Big Kern; also Lake South American.

The stock used were taken with hook and line from Rock Creek and all waters planted are eastern tributaries to Big Kern and north of Rock Creek. (Roosevelt variety.)

August 6th—Planted Lone Pine Creek, a tributary to Middle Kaweah.

August 8th—Made two plants in the head of *Deadman's Cañon;* also one plant in the Middle Kaweah and above Lone Pine Camp. *Deadman's Creek is the* WESTERN *tributary* to Roaring River, which is a southern tributary to South Fork of Kings River. Stock used were golden trout (*Roosevelti*) taken with seine at Whitney Meadows.

This highly successful plant is notable in that the fish were six days on pack mules, with loss of only six fish out of 183.

Most of the journey was over very rough country without trails. Deputy Ellis had a very strenuous time. A. D. F.

GOLDEN TROUT (WHITE VARIETY).

August 13th—Freeman Creek from near Soda Springs to foot of the hill on Nelson trail.

August 15th—Freeman Creek, near summit on Nelson trail; also two plants in Peppermint Creek, one at Peppermint Meadows and the other at Holtby Meadows near the summit of mountains and above the falls. (Stock secured at Fish Creek Meadows with seine.) Freeman Creek is a tributary to Little Kern, and Peppermint Creek is a western tributary to Big Kern.

August 22d—Planted Clover Creek.

August 23d—Boggy Meadow Creek, both streams with golden trout (white variety taken in Little Kern with hook and line). Clover Creek is a tributary to the Marble Fork of Kaweah and Boggy Meadow Creek, tributary to Boulder Creek (Kings River water).

RAINBOW PLANTS.

August 28th—Elam Creek and head of Boulder Creek.

August 30th—Fox Meadow Creek, the last three plants are all tributary to Boulder Creek. Stock used were secured in Big Meadow Creek with seine.

San Francisco, January 10, 1911.

Dr. David Starr Jordan,
Stanford University, Cal.

My Dear Dr. Jordan: I am very anxious to hear what you have to say about the trout* which I secured in the Kern and sent down by Professor Franklin, when you have time to examine it. This trout had none of the golden color whatsoever; its sides and belly were a deep rusty brown and its general color a sort of sooty gray.

I do not think that you will find it to be the *Gilberti*, for I am very familiar with that trout, of course, but it is a trout that is almost lacking in scales and in spots, except on the tail and dorsal fin as the golden trout is marked. In my opinion it is a form of the golden trout which has entered the Kern from Golden Trout Creek and then traveled up to its headwaters, changing its color entirely because of its environment. Very truly yours,

Wm. E. Colby.

Stanford University, Cal., January 30, 1911.

Mr. William E. Colby,
Sierra Club, San Francisco, California.

Dear Mr. Colby: The fish which you sent me is *Salmo Roosevelti*. It differs from the type only in lacking the bright red colors. It is very interesting because we have long wondered what the color of these fishes would be under another environment. But I am unable to see how this species of Evermann, *Salmo Roosevelti,* differs from the original, *Salmo aguabonita.* The *Salmo Whitei* is evidently different. Very truly yours,

David Starr Jordan.

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*This specimen was secured in the Kern-Kaweah River very close to its junction with the main Kern. See Vol. VII, pp. 56-57, Sierra Club Bulletin.

FORESTRY NOTES

FROM THE STATE BOARD OF FORESTRY.

Studies of eucalyptus jointly conducted by the Federal Forest Service and this office and embodied in a bulletin in December fail to bear out assertions regarding growth made by promotion companies. Companies have claimed 100,000 board feet grown in ten years. The best yield shown by our measurements was 57,820 board feet in a grove thirty-two years of age. The bulletin serves as a check on exaggerated statements.

The State Forester's biennial report asks for an appropriation of $50,000 to be expended in fire protection after the organization of a system of co-operation between State, counties, and individuals. The money will be expended in providing patrols and in paying the State's share of expenses in combating fires.

Two companies of coast artillery from the Presidio at San Francisco did splendid work in fire-fighting at Foresthill, Placer County. They were the first troops moved from a distant point to a fire in this State.

The Legislature will be asked to pass laws enabling this office to take charge of forest areas where fire danger is acute. The burning of slashing will be closely regulated if this provision is made.

The Third Biennial Report of the State Forester of California, Mr. J. M. Homans, is a creditable piece of work. The problems of forest protection and management are discussed in a very interesting way. Numerous excellent photographic illustrations give emphasis to the text. A copy of the report may be obtained by addressing the office of State Forester, Sacramento, Cal.

FROM THE UNITED STATES FOREST SERVICE.

The very disastrous forest fires of last autumn have aroused renewed interest in the problem of forest protection. Probably the best treatment of the subject which has appeared will be found in the form of a series of articles in *American Forestry,* by Henry S. Graves, U. S. Chief Forester.

A lumber company engaged in cutting National Forest timber in the Sierra has recently agreed to cut all unmerchantable, diseased trees and old snags in the line of their operations. In consideration of the expenditure involved in this work, the company has been granted a slight concession in stumpage rates. Old snags, if left standing, are a menace in time of fire, since sparks are thrown for hundreds of yards from their tops as from a chimney. Trees affected with fungus diseases tend to spread such diseases to other healthy trees in the forest. By all those interested in the protection and improvement of our magnificent Sierra forests, this will be recognized and welcomed as a decided step in advance.

The Forest Service is now advertising for sale one billion feet of timber along the Hayfork and South Fork of the Trinity River in Trinity County. The Humboldt & Eastern Railway Committee of Eureka, California, has been instrumental in placing this timber on the market in order to make possible the construction of a railroad from Eureka to the vicinity of Red Bluff, on the main line of the Southern Pacific Railroad. This road, if constructed, will hasten the development of one of the most thinly settled and undeveloped regions of the State, a region offering great attractions to those who spend their summer outings in our forests.

This is by far the largest amount of timber ever offered for sale by the Forest Service. Special concessions in stumpage rates and length of time allowed for removal of the timber have been approved by the Secretary of Agriculture in order to make the building of the proposed road feasible.

Over 6,000 pounds of tree seed has been collected this fall by the Forest Service upon the National Forests of this State. This seed is being sown by the forest rangers upon natural forest land which, owing largely to repeated fires, bears no seed trees at present, and, therefore, cannot reforest itself naturally. It is proposed to continue this work on a large scale each year until all National Forest land is in productive condition.

During the past summer a survey has been made of the Sierra, Sequoia, Tahoe, Lassen, Plumas, and Klamath National forests by an entomological expert with a practical knowledge of forestry, with the object of determining the extent of the damage done in any forests by insects and recommending practical measures for abating this damage. Several dangerous infestations threatening large forest areas have been discovered and experiments are now under way to determine the cheapest and most effective treatment of infested trees. This work will be continued next year, emphasizing the education of rangers in this line of work by furnishing them with simple descriptions of the most dangerous insect enemies of trees, their method of work and the best means of destroying them. T. D. W.

PROTECTING WOOD AGAINST MARINE-BORERS.

The Forest Service has lately attacked a problem the solution of which will be of great value all over the world wherever timber structures of any kind are built in salt water. The problem, briefly, consists in determining some means of efficiently protecting such structures against the attacks of the marine-borers.

The marine-borers are forms of sea life which attack all kinds of wood exposed in sea water. They thrive in salt and brackish water all over the world, and every year destroy millions of dollars worth of piling and other timbers. In some places, notably on our Gulf Coast, their attacks are so destructive that a pine pile will be unserviceable after an immersion of thirty days. Even on the Pacific Coast their attacks are terrific,—eucalyptus sheet piling being riddled in eight months in San Francisco Bay. That the drain upon the pockets of wharf users and managers is great may be judged from the fact that in 1909 over 6,500,000 lineal feet of piling were creosoted in the United States alone; this is aside from the timbers used in an untreated condition, and those protected by patented preservatives.

As a preliminary step in the solution of this problem the Forest Service has placed in the waters of San Francisco and San Diego Bays some 250 experimental piles of various wood species. Some are protected by creosote, others by patent preservatives, and the remainder are left untreated. The piles will be inspected at regular intervals until all are destroyed by the marine-borers. From this test the most resistant species of timber, or the best artificial protection, will be determined.

The Forest Service realizes, however, that such a test will give but a temporary solution of the problem, and it is seriously considering both a study of the borers and of pile preservatives in general. If the problem is solved it will mean a saving of millions of dollars annually.

CALIFORNIANS IN THE FOREST SERVICE.

A recent examination of the records in the office of the District Forester, at San Francisco, shows a surprising predominance of Californians in the field force of this District. There are now nineteen National Forests in California, each of them in charge of a Forest Supervisor and his deputy, assisted by ten to thirty rangers and guards as well as one or two forest assistants. These are the men on the ground, dealing directly with the people. Thirteen of the Supervisors are Californians. The remaining six are men originally appointed to positions in the Service from other States.

Out of fourteen Deputy Supervisors, or the men next in rank, ten are Californians, one is a native of an Eastern State, and three are from Rocky Mountain and other Western States. With a total summer force of 360 rangers and guards, taking care of the 28,000,000 acres of forest area within this District, 344 were appointed from California, two from the Eastern States, and fourteen were transferred or appointed from other Western States. Most of the transfers mentioned were made when the organization of the Service was begun in this State, and were for the purpose of filling vacancies where experienced forest officers were needed.

WOOD-USING INDUSTRIES. In co-operation with the State Board of Forestry, the Forest Service is making a statistical study of the wood-using industries in California. In this study the following information concerning each industry is being collected: (a) Products manufactured and field of trade; (b) Kinds of wood used in the manufacture of each product; (c) Approximate amount used annually; (d) Approximate cost f. o. b. the factory; (e) Source of the raw material (whether produced in or out of the State); (f) Form in which the raw material is required at the factory; (g) Grades of material desired for the different uses; (h) Smallest size of each class of material which can profitably be purchased. This information will be compiled into a full and concise report and will be published as a State bulletin.

An investigation of this character will be of value in a number of ways: To the State it will be of considerable assistance in forming an intelligent forest policy and in presenting the advantages the State offers to wood-using industries to locate in it; the timber owner and even the rancher who has a few scattered trees to sell can learn from this report where a market can be found; to the saw-mill operator it may suggest a use for wood which he previously considered of little commercial value; to the manufacturer who is under the necessity of looking beyond his own State for all or part of the lumber needed, it will furnish a source of fairly accurate information concerning a region most likely to supply his needs; the merchants throughout the country who handle wood products can study to advantage the report of what California has to sell or wishes to buy; for people at large it has a statistical value and gives much general information; it gives valuable information concerning the forms, uses, and grades in which the factories desire lumber and also the woods most suitable for particular purposes.

Cards are being sent out indicating the information desired from the various factories. Reports from individual firms will, of course, be considered confidential and will not be combined in the complete report in such a way as to reveal their identity. A copy of the published report will be sent to all reporting firms. Only reporting firms will be included in the directory.

GRAZING IN THE NATIONAL FORESTS OF DISTRICT 5.

The Secretary of Agriculture has authorized the grazing in the National Forests of District 5 for the grazing season of 1911 under paid permits, 206,750 cattle and horses, 10,575 swine and 474,870 sheep and goats. There are nineteen National Forests in the District, comprising a total area of approximately 28,000,000 acres, including private lands. Horses, cattle, and swine are allowed on all the forests, while sheep and goats are permitted in varying numbers on all but the Sierra, Angeles, and the Sequoia. The forests at present providing the most sheep grazing are the Plumas, California, Mono, Tahoe, and Lassen, each accommodating above 50,000 head. The Modoc National Forest at present supplies the most grazing for cattle and horses, with the Shasta and Kern ranking second and third.

The grazing season for the year usually begins in April or May, depending on local conditions. The larger percentage of stock occupy the National Forests during the summer season only, although year-long permits are issued where the circumstances justify, or when the stock owners depend upon the forest grazing-land during the entire year.

The questions of range improvement, reseeding, etc., come in for study and investigation, and during the last year numerous experiments have been started, the object of which will be to determine the practicability of introducing tame grasses on lands best suited to grazing. The effect of grazing upon natural forest reproduction and its value as a measure of protection from the spread of forest fires are big items also demanding the attention of the Service.

BOOK REVIEWS

Edited by Marion Randall Parsons.

"My First Summer in the Sierra." The January, 1911, number of the *Atlantic Monthly* has as its leading article the opening chapters of Mr. Muir's forthcoming book, "My First Summer in the Sierra." For forty years this journal of a mountaineer's first introduction to the mountain world has lain fallow to be given forth now enriched by the wealth of his wider experience and yet with all the joyousness and charm of his fresh outlook and youthful enthusiasm. Lovers of Mr. Muir's work will anxiously await the ensuing numbers and think themselves fortunate in thus being able to become acquainted with portions of a book which, in the opinion of those who have seen the advance sheets, is a masterpiece. M. R. P.

"The Silva of California." A volume of uncommon interest to members of the Sierra Club reached us as we were on the point of going to press. This is the long expected "Silva of California,"* by Professor Willis Lynn Jepson, of the University of California. It is published as the second volume of the "Memoirs of the University." Counting its generous margins the book is of more than quarto dimensions, has 480 pages, 85 handsome full-page plates, and three large folding maps. We regret that there is not time to give it a more exhaustive review with reference to its scientific merits. But we do not think that any one will doubt Professor Jepson's scientific equipment for the task he has completed in this volume. He is easily the foremost authority on the flora and silva of California, and his work represents nineteen years of careful study in the field in all parts of California. These first-hand studies have been supplemented by a survey of extant literature on the silva of California, beginning with the Malaspina and Vancouver expeditions down to the present time; also, by comparison with early type specimens of the California flora preserved in the leading European herbaria.

A feature of special interest to our Club members is the author's discussion of the geographical distribution of California trees. The extent of California, its mountainous character, variations in climate and rainfall, and the uniqueness of a great part of its silva makes this a subject of peculiar interest. This is, in fact, the first time that the data bearing upon distribution have been brought together in a measure approaching completeness. The work of filling in details can now go on with greater assurance and accuracy.

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* *The Silva of California.* By Willis Lynn Jepson. *Memoirs of the University of California,* Vol. II. The University Press, Publishers, Berkeley, Cal. 1910. Pp. 1-480, plates 1-85, maps 1-3. Price, unbound, $9.00; bound, $10.00; express prepaid, $10.80. For sale by the University Press, Berkeley, and by Paul Elder & Co., San Francisco, Cal.

There is a "Census of Trees of California," a discussion of the "Architectural Forms of Native Trees," and an interesting paragraph, with illustrations, on "Teratology in California Trees." The latter refers to abnormal forms. Many will turn with curiosity to Professor Jepson's discussion of the ages of California trees. Twenty-two different families are represented in the silva; of these the pine family alone numbers seventeen species. A careful technical description of each species is followed by a general description of its characteristics, distribution, uses, etc. The many beautiful photographs and drawings (most of the latter the work of the late Miss M. H. Smith), greatly enhance the value of the book. The beautiful large print, heavy paper, and wide margins do credit to the work of the University Press. We congratulate the author on its completion and hope it will find its way into many homes. W. F. B.

"AFRICAN GAME TRAILS."

This book by Theodore Roosevelt is easily the most important book* of the year among records of hunting adventure. Indeed, I do not know of any book written within the last fifteen years that equals it in point of interest for the sportsman. The characterization of himself in the sub-title as a hunter-naturalist betrays a little sensitiveness to the criticism of those who have sought to classify him with mere animal butchers. There is no doubt that our strenuous ex-President enjoys hunting as hunting. It is equally clear, however, that he also pursues this sport as an ardent naturalist. To this fact the numerous excellent photographs as well as the text bear testimony. The first chapter, entitled "A Railroad Through the Pleistocene," gives an account of his progress toward the interior of Africa. Chapter III is devoted to an account of lion hunting on the Kapiti plains. Into it the writer has not only gathered his own thrilling adventures with the king of beasts, but also those of some of his friends. He is a vivid narrator, and no one is likely to find interest flagging when he once gets under the spell of his word. In one of the chapters Mr. Roosevelt has described a thrilling battle with a lion and some native spearmen. These spearmen belong to a warlike pastoral tribe called Nandi. They have long been accustomed to kill lions with spears, and one of these hunts was arranged for the benefit of Mr. Roosevelt. Nothing seems better fitted to give an idea of the adventures narrated by the author than the following description of the Nandis' battle with a lion:—

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* *African Game Trails.* By THEODORE ROOSEVELT. With illustrations from photographs by Kermit Roosevelt and other members of the expedition, and from drawings by Philip R. Goodwin. Published by Charles Scribner's Sons, New York, 1910. Price, $4.00 net.

"One by one the spearmen came up, at a run, and gradually began to form a ring round him. Each, when he came near enough, crouched behind his shield, his spear in his right hand, his fierce, eager face peering over the shield rim. As man followed man, the lion rose to his feet. His mane bristled, his tail lashed, he held his head low, the upper lip now drooping, now drawn up so as to show the gleam of the long fangs. He faced first one way and then another, and never ceased to utter his murderous grunting roars. It was a wild sight; the ring of spearmen, intent, silent, bent on blood, and in the center the great man-killing beast, his thunderous wrath growing ever more dangerous.

"At last the tense ring was complete, and the spearman rose and closed in. The lion looked quickly from side to side, saw where the line was thinnest, and charged at his topmost speed. The crowded moment began. With shields held steady and quivering spears held poised, the men in front braced themselves for the rush and the shock; and from either hand the warriors sprang forward to take their foe in flank. Bounding ahead of his fellows, the leader reached throwing distance; the long spear flickered and plunged. As the lion felt the wound he half turned, and then flung himself on the man in front. The warrior then threw his spear; it drove deep into the life, for, entering at one shoulder, it came out of the opposite flank near the thigh, a yard of steel through the big body. Rearing, the lion struck the man, bearing down the shield, his back arched; and for a moment he slaked his fury with fang and talon. But in the instant I saw another spear driven clear through his body from side to side; and as the lion turned again the bright spear blades darting toward him were flashes of white flame. The end had come. He seized another man, who stabbed him, and wrenched loose. As he fell he gripped a spear head in his jaws with such tremendous force that he bent it double. Then the warriors were round and over him, stabbing and shouting, wild with furious exultation."

Similar adventures are narrated in the chapter entitled "Elephant Hunting on Mount Kenia."

The book is profusely illustrated with excellent photographs by Kermit Roosevelt and other members of the expedition. The publishers have produced a fine volume with readable print and generous margins. Into the appendices has been gathered a variety of bibliographical and scientific information that will prove of great interest and value to naturalists. We commend the book unreservedly. W. F. B.

"ROMANTIC CALIFORNIA." It is refreshing to find, among the volumes dealing with California in its more picturesque phases, a book whose author does not limit his subject-matter to the well-worn theme of the missions. In "Romantic California,"* Mr. Ernest Peixotto has devoted interesting chapters to "Italy in California" and "The Farallones," and has drawn wonderful pictures with both pen and pencil of the ghostly cypress groves of Monterey and the stately redwoods of Bohemia's forest. Those of us who have enjoyed the Sierra Club's weekly tramps about the bay region will be especially interested in the chapters called "Little Journeys from San Francisco," which include descriptions of the peninsula, the region of Tamalpais, and the Piedmont Hills. We cannot but regret, however, that Mr. Peixotto did not devote more than the one brief chapter to the mountain world, the more so as he upholds our belief that the Sierra Nevada is destined to become one of the great playgrounds of the world. "Colorado and the Rockies have become known as summer resorts. The Sierras will have their turn later. And when their advantages and their beauty are fully realized, and they are provided with the large hotels that the tourist crowd seems to demand, they will surely take their place among the great mountain resorts of the world. In the mean time, they retain a certain primitive charm that the Alps have long since lost and that those of us who love them best will be loath indeed to see disappear.

"They differ in many ways from other mountains. In the first place they share, with the rest of California, in a perfectly rainless summer. When I think of the dismal days that one often encounters in the Alps, with the snow-peaks shrouded for days in impenetrable clouds, while heavy vapors rise like ghosts from the moist valleys below, or recall the torrential rains of the Black Forest, I cannot but contrast these blighting conditions with the perpetual blue sky, the brilliant clear sunshine, the dry but cool resinous air of the Sierras."

Mr. Peixotto's drawings alone would place this book in the foremost rank of the out-of-door books of the season. M. R. P.

***Romantic California.* By ERNEST PEIXOTTO. Charles Scribner's Sons, New York, 1910. 219 pages; illustrations by the author. Price, $2.50.

"THE GATEWAY TO THE SAHARA." This volume,* published last year and accidentally overlooked by the reviewer, is likely to gain an added interest to-day when any book relating to the popular theme of Africa gains immediate attention. But Mr. Furlong's "Gateway to the Sahara" needs no such adventitious stimulus to bring it before the reading public. It is a series of vivid and brilliant pictures of the life of Tripoli to-day in oasis, desert, and coast town, the more pleasing in that the author with a restraint no less admirable than rare has in great measure avoided comment, deduction, or generalization, but, placing the results of his observations and experiences clearly before us, has given us the simple facts for what they are worth. The presentation of much of his material in narrative form, as in the case of the story of Salam, a Hausa slave, not only adds a lightness and variety to his style, but lends to the whole volume the stamp of authenticity. Mr. Furlong gives us characters, not types, and lets them speak for themselves. The book is startling in its revelation of conditions in existence to-day which we are wont to consider as belonging altogether to the past. The appalling pictures of slavery, the story of the forgotten prisoner, entombed for half a lifetime for nobody knew what, who cut his way from his dungeon into the open street, the accounts of the raids of the "Masked Tuaregs," a nation one ventures to believe not one American in a hundred has ever heard of, but which is said to be "master of a territory half the area of the United States in extent,"—all savor more of the Middle Ages than of the twentieth century. No less engrossing are the desert incidents and experiences with their pictures of the caravan trade. In his pursuit of information and photographs Mr. Furlong was more than once placed in close proximity with thieves and even in jeopardy of his life. The photographs secured under such exciting conditions are supplemented by drawings, many of them printed in colors. The book has a permanent value and is of more than passing interest, for it depicts a life that "nowhere in Northern Africa . . . can be found more native and typical than in Tripolitania. How long before the primitive customs of this people will give way before the progressive aggression of some Christian power, and the picture of an ancient patriarchal life be tarnished with the cheap veneer of a commercial vanguard, may be answered any morning by the cable news of the daily paper. The great dynamic forces of modern civilization cause events to march with astounding swiftness. Tripoli, in Barbary, is already in the eye of Europe; to-morrow the Tripoli of to-day may have vanished."

M. R. P.

**The Gateway to the Sahara.* By CHARLES WELLINGTON FURLONG, F. R. G. S. Charles Scribner's Sons, New York, 1909. 306 pages, with illustrations by the author from paintings in color, drawings in black and white, and photographs. Price $2.50 net.

“TRAILS THROUGH WESTERN WOODS.” Those who read in the last June BULLETIN the story of the setting apart of the Glacier National Park will be interested in “Trails Through Western Woods”* by Helen Fitzgerald Sanders. This San Francisco girl has described with considerable skill the languorous beauty of the northern lakes and woods in summertime. In the chapters entitled “Enchanted Waters,” “Lake Angus McDonald,” and “Above the Clouds” admirable word pictures will be found of this little-known region of northern Montana. The Indian legends, too, and the account of the Indian Missions of the Northwest are deserving of attention, as the author had unusual opportunities, during a protracted stay at the Flathead Reservation, of becoming familiar with the Indian myths and traditions. The lore relating to the buffalo is particularly interesting. The book is admirably written and is well illustrated with photographs. M. R. P.

“A VOICE FROM THE CONGO.”† The dark continent, as it was characterized by the man who did most to make its hidden places light, claims an unusual share of attention this season. “A Voice from the Congo,” by Herbert Ward, a member of the Stanley expedition for the relief of Emin Pasha, recalls by its anecdotes of Dr. Livingstone, Stanley, and Tippo Tib, the sensation made years ago by the record of that expedition. Since that time much has been written concerning Africa, but the reviewer recalls no previous work treating the subject from quite Mr. Ward’s viewpoint. The Congo tribes, their characteristics, customs, superstitions, even their horrible cannibalistic tendencies are freely portrayed, not from the standpoint of a traveler or that of a sportsman, but from that of a man who has lived among them and grown to know their better qualities and the lines along which they may be expected to develop. Except in touching upon conditions relating to the Arab slave raiders Mr. Ward ignores the political situation. “There are two sides,” he says, “to the subject of Congo affairs: the political side, which has been dealt with so ably by honest, fearless men, who have sought to ameliorate the conditions of a persecuted race. The second side, it appears to me, should relate to the race in question—their nature, their habits and customs, and their personality. If the perusal of the foregoing pages serves to call forth a feeling of interest and sympathy for my African friends, I shall be more than content.” M. R. P.

***Trails Through Western Woods.* By HELEN FITZGERALD SANDERS. Alice Harriman Company, New York and Seattle, 1910. 311 pages, illustrated from photographs by the author. Price, $2.00 net.

†*A Voice From the Congo.* By HERBERT WARD, New York. Chas. Scribner’s Sons, 1910. With illustrations from photographs, sculpture and drawings by the author; 330 pages. Price, $2.50.

"THE MOUNTAIN THAT WAS GOD."* An apotheosis of Mt. Rainier so compelling that we, too, would fain fall down and worship, must prove the author's power over his reader. In addition to the written word there is a wealth of pictures showing the mountain in every possible mood and from every available point of view. Of this publication Mr. John Muir says: "A magnificent mountain book. I never saw finer illustrations, or so many crowded together, like the trees and flowers at the feet of the glaciers. The glorious mountain is indebted to you and so is every mountaineer."

The love of his subject so fills the author's being that he enthusiastically carries us with him from the old Indian legends of mountain worship down to the more prosaic but no less interesting explorations of the present day. He then follows up these glowing descriptions by practical, tabulated information as to routes, guides, equipment and expenditure necessary to reach his Mecca.

Nor are the scientific interests forgotten; witness the chapters on the geological history and the botanical wealth of the Mt. Rainier region. The reading of this book makes one desire to sell all that he has and start at once on a pilgrimage to the "Big Snow" Mountain. H. M. LEC.

"THE MOUNTAINEER."† "My best wishes go with those who climb the hills and scale the peaks of our own wonderful land. The finest of all mountaineering is the making of trails that others can follow to the heights." These words close a greeting from Henry Van Dyke that ushers in Volume III of "The Mountaineer." Particularly noteworthy among the many interesting articles are Mr. E. W. Harnden's "A New Mountain Country," and Miss Lulie Nettleton's account of the Mountaineer Outing to Glacier Peak. Photographs by Harnden, Curtis, and Lindsley deserve special mention, as do the papers on bird and plant life. M. R. P.

"CLIMBING RAINIER AND HOOD."‡ In the July, 1910, issue of *Outdoor Life* there is an interesting account by Miss Edna Cadwalader of the Sierra Club's expedition to Mt. Hood and Mt. Rainier during the summer of 1905 that is well worth reading. Those of us who participated in that outing will particularly enjoy the entertaining accounts of the unusual features and experiences of the snow mountain climbs that made that northern outing one of the most pleasurable we have ever held. Miss Cadwalader was one of the few women of our Club who made the three ascents of Hood, Rainier, and Shasta that summer. The article is well illustrated. M. R. P.

**The Mountain That Was God.* By JOHN H. WILLIAMS, Tacoma, Wash. Illustrated with maps and 140 views of Mt. Rainier; 111 pages. Price, paper, $0.50; Library edition, in boards, $1.00.

†*The Mountaineer,* Vol. III, Cascade Number, November, 1910. Published by The Mountaineers, Seattle Washington.

‡*Climbing Rainier and Hood.* By EDNA CADWALADER. *Outdoor Life,* July, 1910. Outdoor Life Publishing Co., Denver, Colorado. Price, 15 cents.

"THE CANADIAN ALPINE JOURNAL."* This annual publication of the Canadian Alpine Club continues to hold its high standard of excellence. The 1910 issue, recently received, contains the various articles and photographs relating to the Club Outing of 1909. Mt. Robson, an interesting account of whose first ascent was contained in the July, 1910, *Appalachia,* forms the theme of three articles, and there are stories of two other first ascents—"The North Tower of Mt. Goodsir" and the "First Traverse of Mt. Victoria." Papers on "An Adventure With an Eruption of Mt. Pelee," "On Mt. Hood," and "With the Scottish Mountaineering Club at Easter" mark the growth and expansion of the club's interests, which have heretofore seemed national only in character. Among the lighter articles "A Graduating Climb" can be heartily recommended to every participant in a mountaineering club's outing, as a more amusing account of the tenderfoot attitude has never been published. As usual the illustrations are remarkably fine. M. R. P.

"THE MID-PACIFIC MAGAZINE."† The initial number of this magazine comes to us in attractive cover and with no less attractive contents. Among the many outing articles the one entitled "The Trail and Mountain Club," by Guy H. Tuttle, brings us in touch with the activities of a new group of nature lovers. The article tells not only of the organization of a mountain club in Honolulu, but also gives details of the several trails and rest houses which have already been opened, and in addition there is much work in progress and on a very generous scale. When we remember that shelter from the torrential rains of the tropics is very necessary, these houses are an important item in a scheme for outings. "The Hawaiian Trail and Mountain Club" further proposes to issue trail maps of each island in the group, and to publish pamphlets giving information about them. A trail chopped through a forest of matted tree-ferns and interlacing creepers is a most invaluable aid to enthusiastic explorers. The reviewer once on a time tried to climb the wall of the Iao Valley, ascending through the untouched forest, and thus more heartily endorses the work of this new club. Long may it prosper. H. M. LEC.

**The Canadian Alpine Journal,* Vol. II, No. 2. The Alpine Club of Canada, 1910. 229 pages. Price, $1.00.

†*The Mid-Pacific Magazine,* January, 1911, Vol. I, No. 1. Honolulu, T. H. Conducted by Alexander Hume Ford. Price, 15 cents.

PUBLICATIONS OF THE SIERRA CLUB

No. 1.—Articles of Association, By-Laws, and List of Members.

Nos. 4 and 5.—Maps of Portions of the Sierra Nevada adjacent to the Yosemite and to Kings River, 1893.

No. 8.—Table of Elevations within the Pacific Coast, 1895, by Mark B. Kerr and R. H. Chapman.

No. 12.—Map of the Sierra Region, May, 1896.

Nos. 2, 3, 6, 7, 9, 10, 11, 13, together forming Volume I., Nos. 1-8, of the Sierra Club Bulletin.

Contents of Volume I.—Ascent of Mt. Le Conte; Address on Sierra Forest Reservation; California Outing; Crater Lake, Oregon; Diamond Hitch; Explorations North of Tuolumne River; Forest Reservations; From Fresno to Mt. Whitney, via Roaring River; From Gentry's to El Capitan and Yosemite Falls; Grand Cañon of the Tuolumne; Head-Waters of Kings River; Kern and Kings River Divide; Kings River and Mt. Whitney Trails; Knapsack Tours in the Sierra; Mt. Bernard; Mt. Tahoma; Mt. Whitney Trail; New Grove of Sequoia Gigantea; Notes on the Pine Ridge Trail; Route up Mt. Williamson; Search for a Route from the Yosemite to the Kings River Cañon; Sources of the San Joaquin; Three Days with Mt. King; Through Death Valley; Through the Tuolumne Cañon; Tramp to Mt. Lyell; Upper Sacramento in October; Notes, Correspondence, and Reports.

Nos. 14, 15, 16, 17, 18, and 19, together forming Volume II., Nos. 1-6, of the Sierra Club Bulletin.

Contents of Volume II.—Ascent of the White Mountains of New Mexico; Basin of the South Fork of the San Joaquin River; Conifers of the Pacific Slope, Parts I and II; Day with Mt. Tacoma; Early Summer Excursion to the Tuolumne Cañon and Mt. Lyell; Expedition of Prince Luigi Amedeo of Savoy to Mt. St. Elias; Explorations of the East Creek Amphitheater, from Mt. Rose to Mt. Shasta and Lower Buttes; Kaweah Group; Lava Region of Northern California; Mountain Trips: What to Take and How to Take It; Neglected Region of the Sierra; Observations on the Denudation of Vegetation—Suggested Remedy for California; On Mt. Lefroy August 3, 1896; On Mt. Lefroy August 3, 1897; Philip Stanley Abbot; Taking of Mt. Balfour; To Tehipite Valley from the Kings River Grand Cañon; Up and Down Bubbs Creek; Wanderings in the High Sierra Between Mt. King and Mt. Williamson,—Parts I and II; Woman's Trip Through the Tuolumne Cañon; Yosemite Discovery; Notes, Correspondence, and Reports.

No. 20.—Volume III., No. 1, pp. 1 to 118—Ramblings Through the High Sierra (Reprinted from "A Journal of Ramblings," privately printed in 1875); Editorial Notice; Ouzel Basin; Forestry Notes.

No. 21.—Ramblings Through the High Sierra. Same as No. 20. (Specially bound; without Editorial Notes, etc.)

No. 22.—Volume III., No. 2, pp. 119 to 188.—Lake Tahoe in Winter; Ascent of "El Yunque"; Another Paradise; Kings River Cañon Trail Notes; Ascent of "Matterhorn Peak"; Reports; Notes and Correspondence; Forestry Notes.

No. 23.—Volume III., No. 3, pp. 189 to 270.—Parks and Peaks in Colorado; The Work of the Division of Forestry in the Redwoods; The Mazamas on Mt. Jefferson; Wagon-Trips to the Sierra; The Big Basin; The Re-Afforesting of the Sierra Nevada; The Descent of Tenaya Cañon; An Ascent of Cathedral Peak; A Glimpse of the Winter Sierra; Notes and Correspondence; Forestry Notes.

No. 24.—Volume III., No. 4, pp. 271 to 339.—The Mazamas on Mt. Rainier; Lassen Buttes; From Prattville to Fall River Mills; Zonal Distribution of Trees and Shrubs in the Southern Sierra; Mt. Washington in Winter; Round About Mt. Dana; Notes and Correspondence; Forestry Notes; Reports.

No. 25.—Volume IV., No. 1, pp. 1 to 75.—Joseph Le Conte in the Sierra; El Capitan; Camp Muir in Tuolumne Meadows; The Sierra Club Outing to Tuolumne Meadows; In Tuolumne and Cathedral Cañons; The Great Spruce Forest and the Hermit Thrush; From Redding to the Snow-clad Peaks of Trinity County; Trees and Shrubs in Trinity County; Notes and Correspondence; Forestry Notes; Reports.

No. 26.—Vol. IV., No. 2, pp. 77 to 176.—Into the Heart of Cataract Cañon; My Trip to Kings River Cañon (Reprint); Conifers of the Pacific Slope, Part III; Birds of the High Mountains; Notes and Correspondence; Forestry Notes; Reports.

o. 27.—A Flora of the South Fork of Kings River from Millwood to the Head-Waters of Bubbs Creek.

PUBLICATIONS OF THE SIERRA CLUB—*Continued.*

No. 28.—Vol. IV., No. 3, pp. 177 to 252.—Among the Sources of the South Fork of Kings River, Part I; With the Sierra Club in Kings River Cañon; Red-and-White Peak and the Head-Waters of Fish Creek; Mt. Whitney, Whitney Creek, and the Poison Meadow Trail; A New-Year Outing in the Sierra; The Ascent of Volcano Mayon; Notes and Correspondence; Forestry Notes; Reports.

No. 29.—Vol. IV., No. 4, pp. 253 to 323.—Among the Sources of the South Fork of Kings River, Part II; the Coast Sierra from California to Panama; Ralph Sidney Smith (In Memoriam); Climbing Mt. Brewer; Table of Elevations of Peaks in the Sierra Nevada Mountains over 12,000 feet; Kings River Outing, 1902—Botanical Notes, etc.; Near the Kern's Grand Cañon; Reports; Notes and Correspondence; Forestry Notes.

No. 30.—Vol. V., No. 1, pp. 1 to 85.—The Ascent of the North Palisades; Variations of Sierra Glaciers; How Private Burns Climbed Mt. Pinatúbo; The Hillside Farmer and the Forest; The Notable Mountaineering of the Sierra Club in 1903; On the Trail with the Sierra Club; The Completed Le Conte Memorial Lodge; Reports; Notes and Correspondence; Forestry Notes.

No. 31.—Vol. V., No. 2, pp. 87 to 152.—Mt. Whitney as a Site for a Meteorological Observatory; The Water-Ouzel at Home; The San Francisco Peaks in April; Over Harrisons Pass with Animals; The Ascent of San Antonio; Secretary's Report; Treasurer's Report; Notes and Correspondence; Forestry Notes.

No. 32.—Vol. V., No. 3, pp. 153 to 270.—First Ascent: Mt. Humphreys; Address at Memorial Exercises; Mt. Lyell and Mt. Ritter Ascents by Sierra Club Outing of 1904; A Deer's Bill of Fare; Domes and Dome Structure of the High Sierra; Some Aspects of a Sierra Club Outing; The Evolution Groups of Peaks; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 33.—Vol. V., No. 4, pp. 271 to 328.—The Grade Profile in Alpine Glacial Erosion; Systematic Asymmetry of Crest-Lines in the High Sierra of California; The Tuolumne Cañon; Inscription for the Le Conte Memorial; Over Harrisons Pass from the North with a Pack-Train; California Forestry Law; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 34.—Vol. VI., No. 1, pp. 1 to 74.—The Sierra Club's Ascent of Mt. Rainier; Mt. Rainier, Mt. Shasta, and Mt. Whitney as Sites for Meteorological Observatories; The Sky-Line of the Tatoosh Range, Mt. Rainier National Park; The Effect of the Partial Suppression of Annual Forest Fires in the Sierra Nevada Mountains; In Memoriam; Joseph Le Conte; Wild Animals of Mt. Rainier National Park; The Sierran Puffball; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

All of above are out of print, having been destroyed in the fire of April 18, 1906.

No. 35.—Vol. VI., No. 2, pp. 75 to 152.—An Ascent of the Matterhorn; The Name "Mt. Rainier"; The Second Kings River Outing; The Motion of the Nisqually Glacier, Mt. Rainier; Report on the Kings River Cañon and Vicinity; Reports; Notes and Correspondence; Book Reviews; Forestry Notes; Revised By-Laws of the Sierra Club.

No. 36.—Vol. VI., No. 3, pp. 153 to 210.—The Aftermath of a Club Outing; Along the Foothills to Lake Chabot; Mt. Rose Weather Observatory; The Ascent of Asama-Yama; Reports; Secretary's Report; Treasurer's Report; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 37.—Vol. VI., No. 4, pp. 211 to 284.—The Hetch Hetchy Valley; To Joseph Le Conte, a Poem; Lake Ramparts; The Grand Cañons of the Tuolumne and the Merced; The Water-Ouzel, a Poem; Photograph of the Water-Ouzel; Bird Life of Yosemite Park; An Easterner's Impressions of a Sierra Club Outing; Indian Pictographs in Pate Valley; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 38.—Vol. VI., No. 5, pp. 285 to 336.—William Kent's Gift; Redwoods; The Mt. Ritter Knapsack Trip; A Knapsack Trip to Mt. Ritter; The Yosemite Waters; Snowfall in the Sierra Nevada; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 39.—Vol. VII., No. 1, pp. 1 to 84.—The High Mountain Route Between Yosemite and the Kings River Cañon; With the Sierra Club in the Kern Cañon; Down the Kern-Kaweah; An August Outing in the Upper Merced Cañon; Organization of Sierra Club; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 40.—Vol. VII., No. 2, pp. 85 to 140.—Camping Above the Yosemite—A Summer Outing With the Sierra Club; From Kern Cañon to Giant Forest—The Chronicle of a Knapsack Trip; Up From "The Land of Little Rain" to the Land of Snow, Being the Journal of a Sledging Trip Up Mt. Whitney in Winter; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 41.—Vol. VII., No. 3, pp. 141 to 214.—The Observatory on Mt. Whitney; The Grand Circuit of the Yosemite National Park—Down Tenaya Cañon; On Mt. St. Helens With the Mazamas; A High Sierra Circuit on Headwaters of Kings River; Organization of the Sierra Club; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 42.—Vol. VII., No. 4, pp. 215 to 274.—Galen Clark; The Grand Cañon of the Tuolumne; Little Studies in the Yosemite Valley; The New Glacier National Park; The Ascent of Fujiyama; The Proposed Estes National Park; Winter in the High Sierra; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

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1911

SIERRA CLUB BULLETIN

Edited for the Club by
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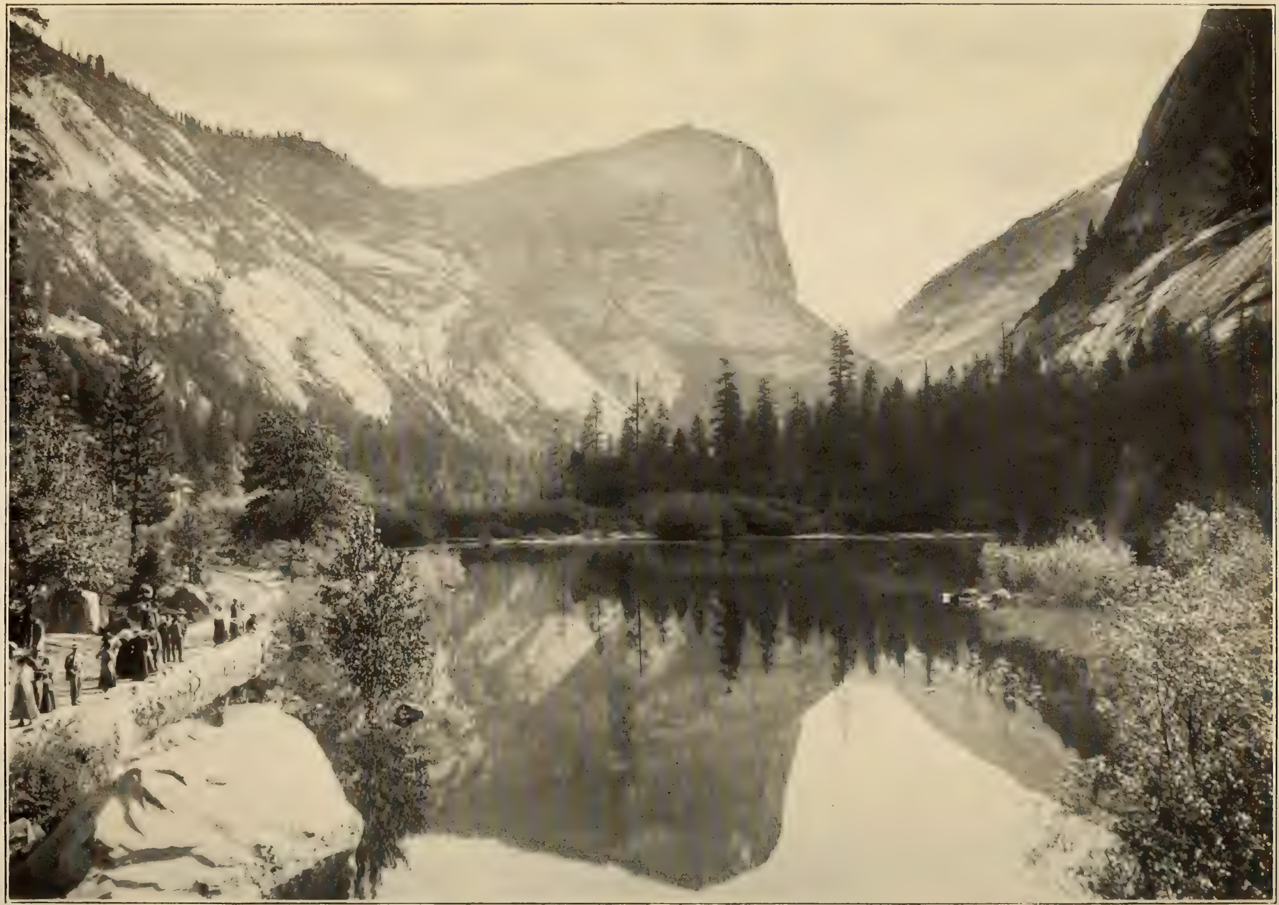

MIRROR LAKE, YOSEMITE VALLEY.
Photograph by Pillsbury Picture Company.

SIERRA CLUB BULLETIN

VOL. VIII SAN FRANCISCO, JUNE, 1911 NO. 2

LITTLE STUDIES IN THE YOSEMITE VALLEY

BY F. E. MATTHES.

III. THE WINDS OF THE YOSEMITE VALLEY.*

To most folks roaming about the Yosemite Valley its winds and breezes seem a matter of small interest or consequence. They come and go, now one way, now another, apparently without regularity or system,—moody, capricious beyond analysis. In the midst of the grand tumult of the Yosemite landscape, our senses fairly bewildered with its many glories, we cannot stop to consider these little breaths that blow about us, and let them puff by unheeded. The Yosemite region is not a windy country anyway; but once or twice in a season does a gale arise to disturb its wonted tranquillity, and its daily zephyrs are such light, airy little nothings as to scarcely seem worthy of downright study. And yet they become singularly interesting when once rightly understood. They turn out to be surprisingly systematic and withal so intimately connected with the configuration of the valley itself, that, to one who has at length mastered their secret they grow to be one of its immanent features, as characteristic and inseparable as El Capitan or the Yosemite Falls.

It happens to be so ordained in nature that the sun shall heat the ground more rapidly than the air. And so it comes that every slope or hillside basking in the morning sun soon becomes itself a source of heat. It gradually warms the air immediately over it, and, the latter, becoming lighter, begins to rise. But not vertically upward, for above it is still the cool air pressing down. Up along the warm slope it ascends, much as shown by the arrows in the accompanying diagram (Fig. 1). Few visitors to

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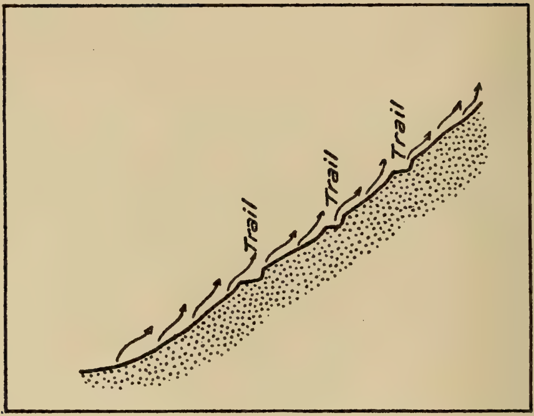


FIG. I.

the valley but will remember toiling up some never-ending zigzags on a hot and breathless day, with the sun on their backs and their own dust floating upward with them in an exasperating, choking cloud. Perhaps they thought it was simply their misfortune that the dust should happen to rise on that particular day. It always does on a sun-warmed slope.

But again, memories may arise of another occasion when, on coming down a certain trail the dust ever descended with the travelers, wafting down upon them from zigzag to zigzag as if with malicious pleasure. That, however, undoubtedly happened on the shady side of the valley. For there the conditions are exactly reversed. When the sun leaves a slope the latter begins at once to lose its heat by radiation, and in a short time is colder than the air. The layer next to the ground then gradually chills by contact, and, becoming heavier as it condenses, begins to creep down along the slope (see Fig. 2). There is, thus, normally a warm updraft on a sunlit slope and a cold downdraft on a shaded slope—and that rule one may depend on almost any day in a windless region like the Yosemite. Indeed, one might readily take advantage of it and plan his trips so as to always have a dust-free journey.

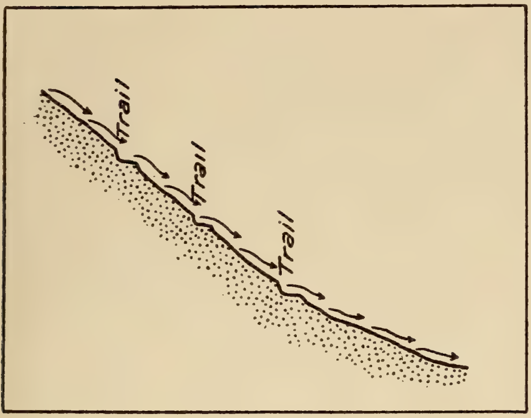


FIG. 2.

One might time his ascent for an hour when the route lies wholly in shadow; the dust will then obligingly pour over the edge of the trail, perhaps upon others following on a lower zigzag, but that, of course, is their lookout. Conversely one might time the descent for an hour when the trail is wholly in the sun. The dust will then float up behind one, leaving ever a clear path ahead. The writer, in fact, did deliberately put this in practice on more than one occasion during his sojourn in the valley, whenever the choice of hour mattered little otherwise—always with the desired result. Thus, he would be careful to make the ascent of the short trail to Glacier Point before its zigzags emerged from the morning shadows, and to descend again before the sun had set on them. But the casual tourist is seldom favored in this way. His sight-seeing trips are laid out for him with little regard for any rules like these, and as a consequence, he eats Yosemite dust a good share of the time.

But, it may be objected, the valley sides lie ever part in sun, part in shadow. The very lay and configuration of the valley are such that at no hour of the day is either of its slopes entirely sunlit; what with the many cliffs and headlands and recesses there is always a shadow here or there. Is there, then, really an updraft wherever the sun shines and a downdraft in every shadow patch? Most assuredly there is. That is one of the peculiarities of the valley, the immediate outcome of its exceptionally bold cliff topography. Every cliff that casts a shadow thereby creates a downward breeze. And thus, there are in spots throughout the valley local breezes that recur daily at certain hours as the shadows come and go. One may readily test this to his satisfaction on a place like Glacier Point. In the morning, when the great cliff is still in shadow, a bit of paper tossed over the brink at once disappears, sucked down by a descending current, but at noon when the sun beats on the cliff, the very opposite will happen; instead of sailing down, the paper shoots upward, and continuing upward, disappears like a tiny white speck in the blue.

But let it not be thought that there are none but local air currents in the valley. There is also a great general movement, itself the resultant of all the lesser ones. How it is brought about is not difficult to explain. As the afternoon wears on and the lengthening shadows advance over the landscape, the downward breezes progressively gain in force, extinguishing one after another the upward currents, until at last with the lowering of the sun they become general over the entire surface of the cooling land. Sliding down from every slope and cliff, they join in the bottom of the valley, there to form a broad air-stream or river that flows on toward the plains below. Every side valley or cañon, moreover, sends its reinforcements, for in every one of them the same thing is happening; and thus, with nightfall there is organized a great system of confluent air-streams corresponding closely to the valley system of the land.

All night long this down-valley movement continues, until at length the morning brings the warming sun again. Then, as summit after summit, and slope after slope is heated—insolated is the technical term—the warm updrafts are revived again. At first feeble and in spots only, they soon wax stronger and more general, and, as the shadows retreat and dwindle before the oncoming light invasion, they finally gain the upper hand. The nocturnal air-streams cease to flow and a general movement is inaugurated in the opposite direction, up toward the highlands at the valley head. It is not usually so noticeable as the night wind, for its tendency is naturally to spread and diffuse upward, while the nocturnal movement is one of condensation and concentration, especially vigorous along the valley floor. But it is none the less a well-defined, characteristic movement that continues throughout the day. Late in the afternoon, with the growing of the shadows it gradually comes to a stop and the tide turns back again. Thus the air of the Yosemite Valley goes through a daily ebb and flood, reversing early every morning and again late in the afternoon.

Most mountain valleys have similar alternating night and day winds, but those of the Yosemite Valley are exceptionally pronounced. All conditions in its case favor the orderly consummation of the process and conspire to accentuate each phase. No general winds sweep over the country to interfere with the local up- or downdrafts, except at intervals of many weeks; and so exceedingly dry and pure is the atmosphere of the Sierra, so few particles of dust or moisture does it hold, that the sun's rays plunge through it almost without let or hindrance. Insolation, consequently, is particularly intense and begins almost immediately with the rising of the sun, while radiation is equally rapid and sets in promptly the moment the sun disappears. And thus it comes that the reversals in the Yosemite Valley take place with clock-like regularity, and the entire movement assumes the rhythmic swing of a pendulum. Nothing was better calculated to make this visible to the eye than the smoke column from the forest fires that raged persistently at the lower end of the valley during the summer of 1905. Every morning the valley was clear, having been swept out, so to speak, by the nocturnal down-valley current, and the smoke pall could be seen floating off to the southwest, low down on the Sierra flank. But with the rising of the warm day breezes the smoke would gradually advance up the valley, becoming denser by degrees, until by nine or ten o'clock one could scarcely see across from rim to rim. This condition would prevail all day until with the afternoon reversal the down-valley wind would set in again and take the smoke back with it. Much to the chagrin of the writer, who at the time was engaged in the survey of the valley and depended on the clearness of the air for his long-distance sights, this daily smoke invasion persisted for four long months with scarce an interruption. It may be imagined that he came to understand the phenomenon right well.

Oddly enough it is precisely upon this daily atmospheric seesaw that one of the Yosemite's chief attractions depends. As is well known, one must go to Mirror Lake at an early morning hour, if he wishes to see it at its best. The surprised and usually somewhat vexed tourist who finds he must arise at an impossible hour in order to enjoy a perfect reflection, little dreams that what he is undertaking really amounts to keeping a tryst with the early morning reversal out on the shores of Mirror Lake; and that, unless he be quite punctual he will miss it because of its almost momentary briefness. Yet such is actually the case. The stillness of the water surface sets in just as the down-valley draft dies out; but as soon as the upper cliffs of Tenaya Cañon become sufficiently insolated, updrafts begin to stir the air again, and a faint tremor forthwith steals over the lake. Accepting the correctness of this explanation, one is tempted to believe there might be another calm corresponding to the afternoon reversal,—an ever so much more convenient hour for the tourist. But alas, experience has shown that this cannot always be depended on. The reason is, no doubt, that in the afternoon there is no well-defined pause in the circulation of the air of Tenaya Cañon, because of the presence of great shadows on its north side which send down eddying breezes at various times.

This discussion of the winds of the Yosemite Valley would scarcely be complete without a word about the breezes that play near the great waterfalls. Each of these, it will be remembered, leaps from the mouth of an elevated hanging valley. At night, when the down-valley currents are organized, the stream issuing from each of these valleys plunges down over the cliff very much like a waterfall. Few people probably are aware of the existence of these — shall we call them "air falls"? Nevertheless, they are by no means imaginary, as one may readily find out by ascending either the Yosemite Falls trail or the Nevada Falls trail in the evening. The writer had occasion to do so many times when returning to his high-level camps above the valley, and the unpleasant memory of the chilling downdrafts that poured upon him on these evening trips is with him yet. During the daytime, on the other hand, the air rises vertically along the cliffs and up into the hanging valleys, taking part of the spray from the falls along with it. A pretty example of this may be seen at the Bridal Veil Falls, where two little combs of spray, one on each side of the stream, steadily curve upward over the brink. As soon as the sun is off the cliff, however, they at once cease to exist.

Many other features about the valley that find their explanation in the wind system here outlined might be added, but the foregoing will suffice to direct attention to them.

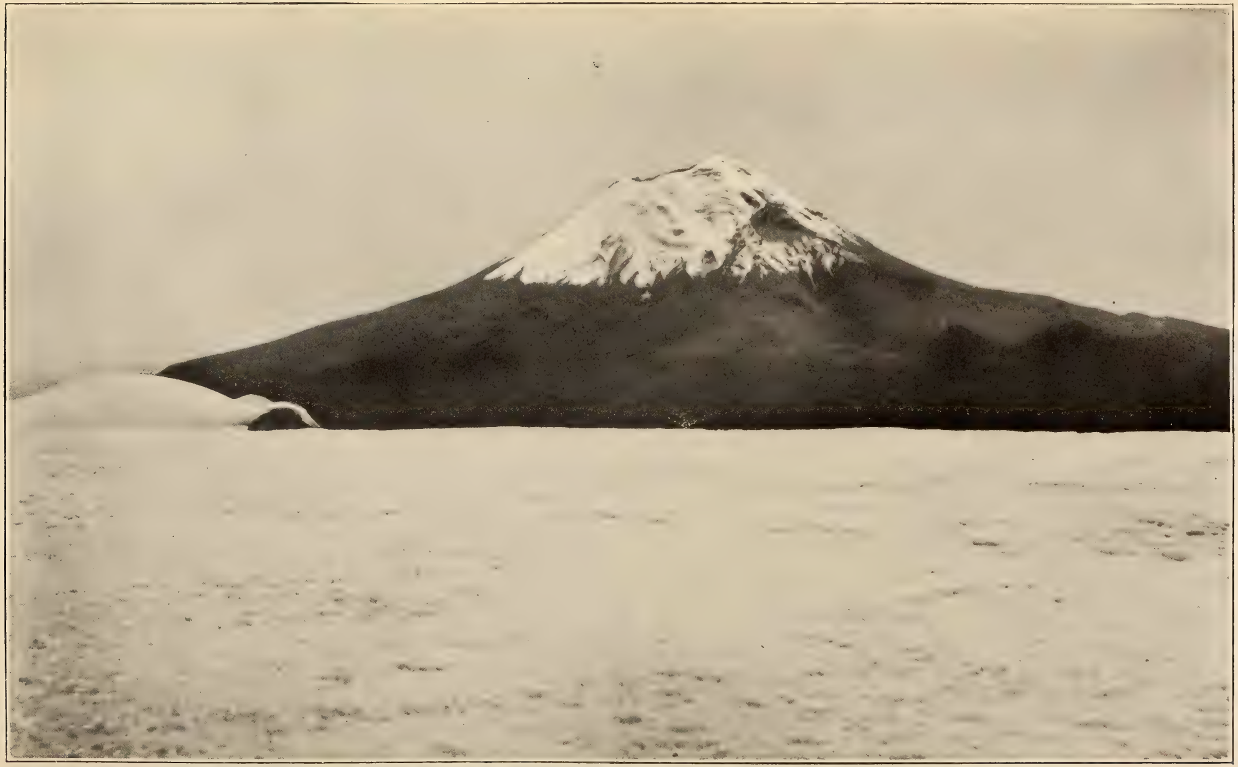
FOUR MEXICAN VOLCANOES.

By R. W. Poindexter, Jr.

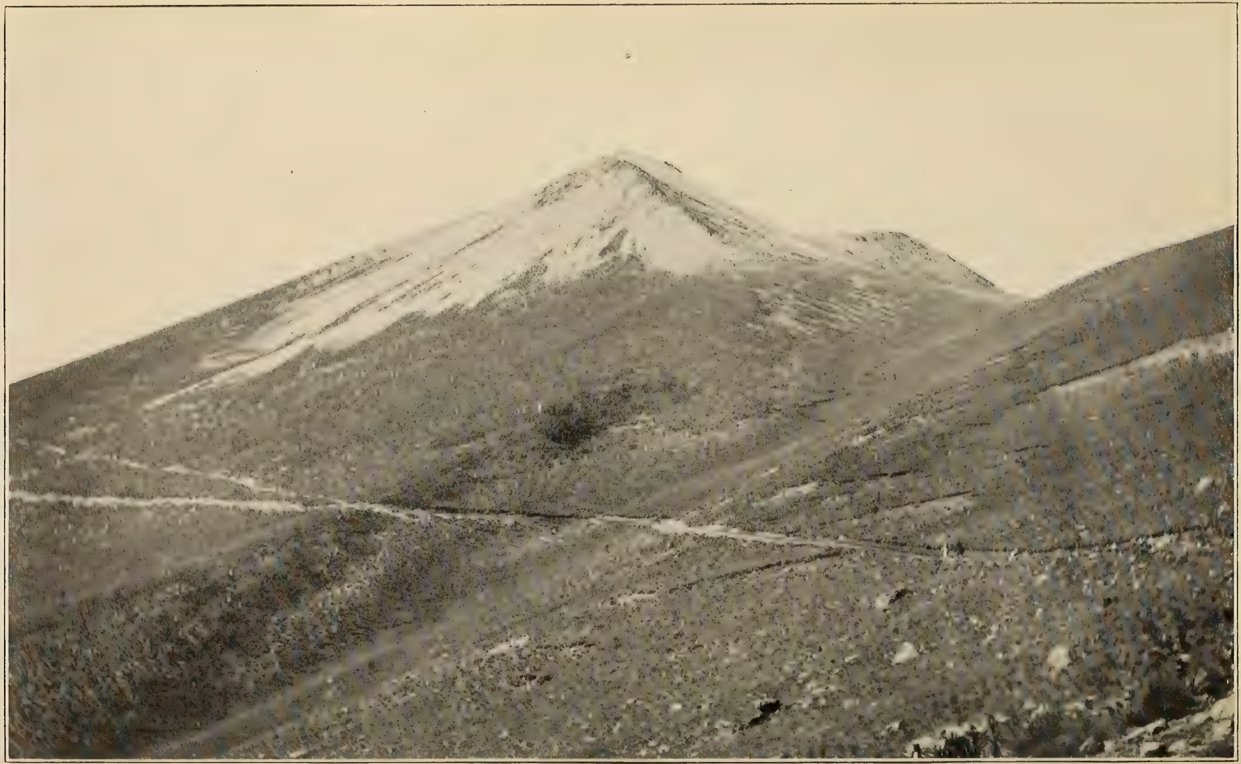
The City of Mexico is situated in a region marked by intense volcanic activity. Lying at an altitude of 7400 feet, on a plain so level that millions have been spent in draining it, it is surrounded on all sides by lava hills and ranges, and burnt-out volcanoes varying in size from little cones and craters a few hundred feet high to the great snow-covered mountains Ixtaccihuatl and Popocatepetl, which lie thirty-five miles to the southeast of the city, and form one of the principal features of the landscape.

It seems well worth while to tell my fellow-members of the Sierra Club something about the four highest of the Mexican volcanoes; for, although they have not the wonderful charm of our Sierra, which for me surpasses any heaven I have ever imagined or read about, they have plenty of interest and individuality. Moreover, Mexico City is visited each year by many Californians, (that is, when there is no revolution in progress), and from the City of Mexico all four mountains are easily reached. It is surprising how little is written about them when one considers the fact that they are quite often climbed. A partial exception is Popocatepetl. I should mention here a beautifully illustrated article published in the *National Geographic Magazine* for September, 1910. I was pleased to find Mr. Andrew C. Lawson's card, dated August 23, 1906, on the summit of Nevado de Toluca, and hope that the Sierra Club registers which I left on the other three mountains will soon record other Sierra Club names.

The names of the four volcanoes, with their respective heights, as given by the Mexican Society of Geography and Statistics, are the following:



POPOCATEPETL FROM TOP OF IXTACCIHUATL—SNOW IN FOREGROUND.



TRAIL ON NEVADO DE TOLUCA, JUST BEFORE REACHING GAP WHICH GIVES ENTRANCE TO CRATER.

Nevado de Toluca, or Xintecatl	15,170 feet
Ixtaccihuatl	17,340 feet
Popocatepetl	17,520 feet
Pico de Orizaba, or Citlaltepetl	18,700 feet

They are alike in many ways. They all rise from level plateaus excepting Orizaba, which has a plateau on the west, but slopes down to low country on the east. With the exception of Ixtaccihuatl, which is at least three miles long and has no crater, they are cone-shaped, as volcanoes are wont to be; have smooth, sloping sides and lack the gorges, rocky cliffs, and other water and ice-formed features that characterize the Sierra. Water is scarce. What few streams there are issue low down on the mountainside and are quite small. Ixtaccihuatl is built of more solid rock than the other three. Consequently small streams come out from under the glaciers and flow above ground, instead of sinking through ashes and porous lava. Like most volcanoes, each stands alone, unsupported by smaller companions. I am not enough of a geologist to describe the rocks of which these mountains are composed; but they are, of course, entirely of igneous origin: andesites, porphyries, etc., and their color is dull gray or brownish. It is the snow that makes the mountains good to look at, and snow, being the same the world over, needs no description. There is little volcanic ash, for which the climber is duly thankful.

The lower slopes are well covered with soil, which supports forests composed of one or two varieties of pine and a species of fir. The trees are small, or of moderate size, and there is no underbrush. The ground is well covered with a kind of bunch-grass called *zacaton*. There are few flowering plants, and animal life is almost entirely lacking. In all my trips I have seen but one rabbit, no squirrels or chipmunks, and few birds. There may be deer or coyotes, but I have not seen any. Snakes of all kinds are scarce in this part of Mexico, in spite of the fact that school histories state the incident depicted on the national flag to have happened within twenty miles of the city.

As timber line is reached, the trees grow smaller, and tend to become segregated into groups instead of standing as isolated individuals. The bunch-grass continues to cover the smooth, unbroken slopes, unaccompanied by any other plant, up to 14,000 or 15,000 feet. There are many little trails, worn by the ice-cutters and the herders of cattle and sheep. It is an easy matter to make trails where there are neither rocks nor brush to contend with.

The amount of snow varies with the season. Strange to say, there is most snow at the end of summer, and by May there is hardly any left on the south slopes. This is because all the rain comes in summer, when the mountains are often covered with clouds for weeks at a time. A Mexican winter is drier than a California summer, hence winter is the season for climbing. The best time is the latter part of November, December, or January, when the air is still clear from the thorough washing given it during the rainy season. Later it becomes warm and the air is hazy, and, by May, storms may be encountered. While it is always cold at these high altitudes, it is not cold enough, even in winter, to be more than agreeably bracing.

One fine thing about these climbs is that they are inexpensive. If one can talk a little Spanish and arrange with the native guides, the trip from Mexico City to Ixtaccihuatl or Popocatepetl should not cost more than ten dollars (U. S. currency) a person for a small party. This includes guides, horses, railroad fare, and hotel accommodations at Amecameca. Nevado de Toluca can be climbed at a cost of about fifteen dollars, and Orizaba for twenty-five or thirty dollars a person, the latter being a four days' trip.

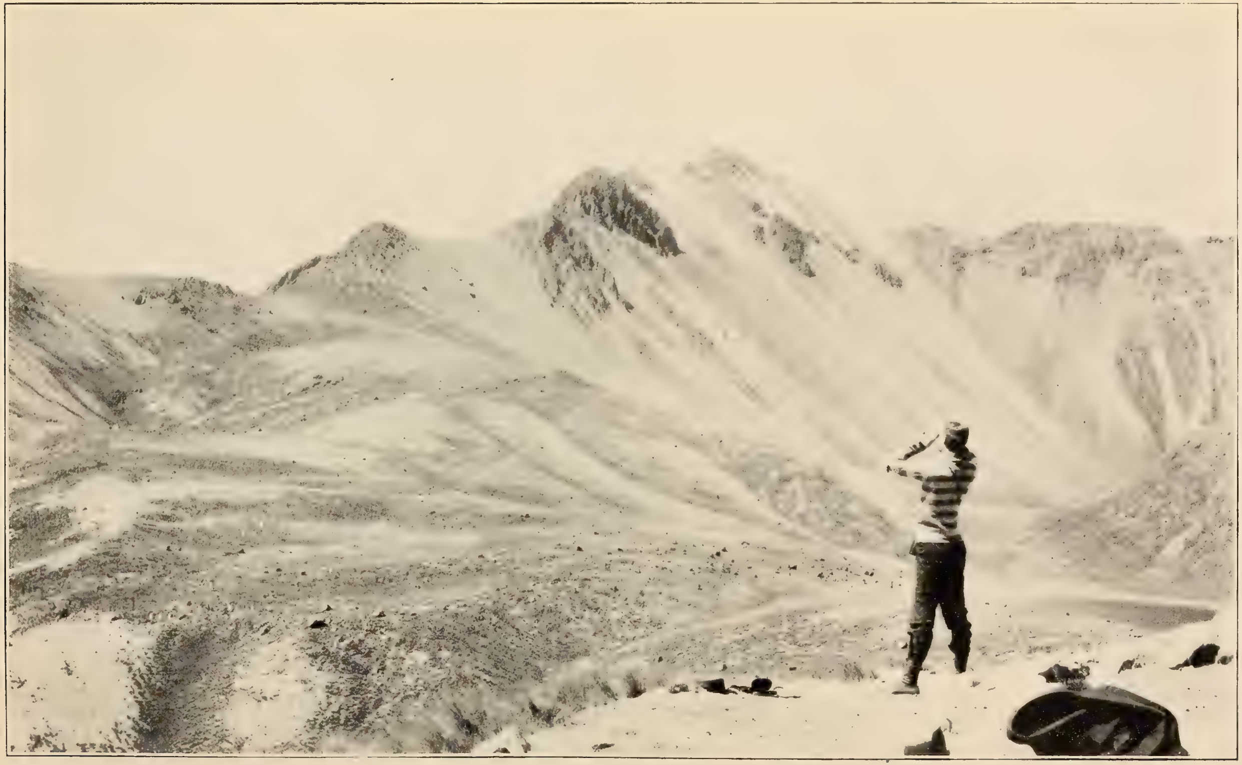
The guides are Indians, but all speak Spanish. They do pretty good work, remarkable work when you consider that they live almost entirely on *tortillas,* and their wearing apparel consists of a cotton shirt and trousers, resembling pajamas; one or two blanket-like *zarapes,* leather sandals called *guaraches,* and a big straw sombrero. The first day they walk about fifteen miles uphill, while you are riding. In camp they get wood and water, attend to the animals, and probably stay up half the night talking or singing or imbibing *aguardiente.* The next morning, long before dawn, they fix the fire, wrap their feet in rags to keep them from freezing, eat a few *tortillas* which have been thrown in the ashes to warm, saddle the horses, and walk up to the snow line while you ride again. Here you hand them all you may have in the way of lunch, field glasses, and kodaks, for them to carry, and then you set out. Where the snow is steep and hard the guides cut steps with a spade, or ax, or grub hoe, because their sandals slip where hob-nailed boots would hold perfectly well. When on the descent, the snow line is reached again, the horses will probably be waiting for you while another fifteen-mile walk is waiting for the Indians, should you care to return to the town the same day. They are perfectly cheerful at the end of the journey. You pay them the stipulated sum, with a little extra for *pulque,* and they never fail to ask when you are coming again, or whether you have friends who would care to make the trip.

El Nevado de Toluca lies forty miles west of Mexico, and fifteen or twenty miles south of the city of Toluca, which is chiefly noted for its cheese and its large brewery. To reach the volcano you go to Toluca, and then, by a small branch railroad called the Toluca, Tenango and San Juan, you reach San Juan or Calimaya, at either of which places horses for the trip can be hired. I went with a friend who knew the manager of this little railroad. He provided us with a track automobile at Toluca, and we were taken to Calimaya without delay. The trip from Mexico City to Toluca, by the way, is a beautiful one, and well worth taking for its own sake. Nevado de Toluca is interesting on account of its huge crater, which is more than two miles in diameter. The mountain rises from a plain, over 8000 feet high, and quite as level as the valley of Mexico. As the sides slope gradually, particularly near the base, it obviously covers a large territory.

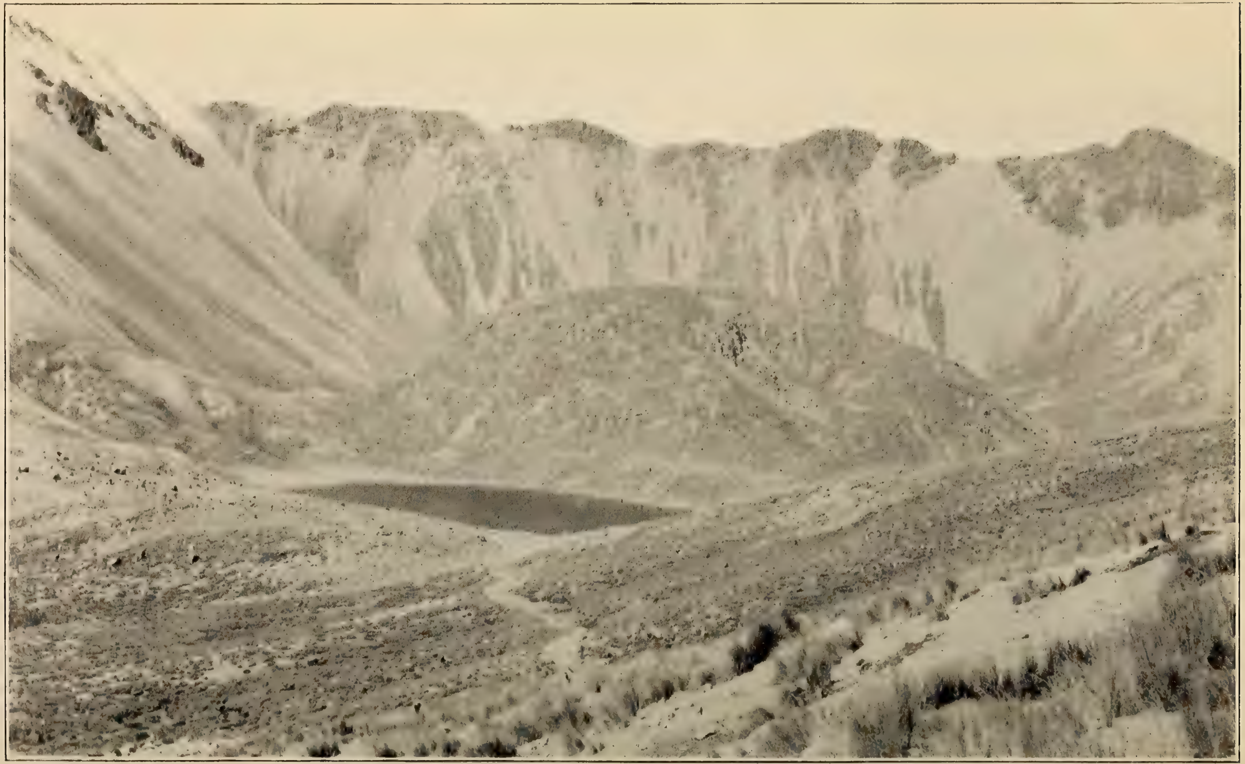
We started from Calimaya shortly after daylight, and, as the date was the first of November, the air was frosty. We left the town behind us and gradually ascended. The sun came out and the air grew warm. At eight o'clock we stopped for a cup of fresh milk at the hut of an Indian cattleherd. From here the trail grew steeper, but continued without much zigzagging up to the timber line at about 13,000 feet. Here it turned to the left and went across the mountain, ascending with a regular grade to a low gap on the northwest side, which gave entrance to the crater.

The floor of the crater is a hundred feet below this gap. In the middle a mound of lava rises to a height of 500 feet. On the west side of this mound are two small, shallow lakes and on the south side lies a larger one, half a mile in length and very deep in the middle. The water in the lakes is clear and fresh, but I saw no evidences of life in it. Bunch-grass grows sparsely on the crater floor, but there are no trees. The highest point, El Pico del Aguila, is on the southwest side, 1500 feet above the level of the lakes. The rim of the crater slopes down sharply on the west side of the peak, but maintains a rather even level on the south side, with an inside slope so steep that it is surprising that the volcanic ash with which it is covered does not slip down. This ash lies in vertical streaks of brick-red, lavender-gray, and yellow. El Pico del Aguila itself is rocky, and offers the only approach to rock climbing to be found on any of the mountains under consideration, if ascended by their easiest routes. Although snow often fills the crater and comes well down on the sides of the mountain, at this time there were only some vertical streaks on the inside of the crater wall, where altitude and northerly exposure tend to conserve it.

In ascending to the summit, we rode along the rim to a



PICO DEL AGUILA, NEVADO DE TOLUCA.



CRATER OF NEVADO DE TOLUCA, NOVEMBER 1, 1910.

point about half way between the gap by which we had entered and the peak, where we dismounted and continued on a level around the inside of the crater wall, crossing some rocks and tongues of snow, to a point almost directly beneath the summit where we began the ascent straight up over rocks and ash. As I said before, Mr. Andrew Lawson's card was at the top, together with a number of other signatures, mostly of Mexicans, bearing various dates. The previous night we had met at Calimaya two Frenchmen who had just made the ascent, but they had not left their names. The view was good. The land slopes down to the "Hot Country" on the south and west; to the north lies the level valley of Toluca, and to the east the range which divides it from the valley of Mexico. Clear beyond are beautiful snow-covered Ixtaccihuatl and Popocatepetl.

In descending we made straight for the large lake, running and jumping down over the ash-covered slope. It was growing late, and as the sun went down behind El Pico del Aguila, wonderful colors spread over the rocks and danced on the ash-covered crater walls. Half of the lake lay deep sea-green in the sunlight while half melted back into the purple shadow of the rocky wall. The sun was still shining when we reached the gap, but darkness overtook us before we reached the level and we passed from the cold of the summit to the warmer atmosphere of the gently sloping sides. We missed the Toluca train by an hour and had to spend another night at the little inn in Calimaya; but a good hot bath when we reached Toluca next morning made up for that.

Who does not remember reading about Popocatepetl in his school geography? What a fascinating sound that word Popocatépetl (that's the way they pronounce it here) has! It is only one of the many strange names that lie scattered over the map of Mexico. I formerly imagined Popocatepetl to be a small, conical mountain, with a bottomless, perpendicular hole a yard or two in diameter in the middle of it. Perched on the edge of the hole was a little old man with a big hat, who was boiling eggs in a kettle suspended by a rope from the end of a stick. This graphic description, however, is not true to life, for, while there is a hole in the top of the mountain, it is nearer a thousand yards in diameter than two, and, while one might boil eggs in one or two spots, the top of the mountain is on the whole better adapted to making ice-cream. If some of the people who, when I was leaving California for Mexico, offered me their sympathy on account of the heat I was about to encounter could suddenly be transported to one of Mexico's high mountains, or even to Mexico City in mid-summer, they would quickly modify their opinions as to Mexican temperature.

About three years ago I decided that I wanted to climb this famous mountain. So when a legitimate opportunity to visit Mexico came my way, I seized it at once. On getting here I found that climbing "Popo," as they call it, is a regular tourist stunt. There is a place called Popo Park, and for the fixed sum of fifty pesos the proprietor thereof agrees to take any one to the edge of the crater, even if it is necessary to carry him part of the way on a stretcher.

When I at last realized my long-cherished desire Amecameca, and not Popo Park, was the starting-point. The chief reason for this was the reduction in the cost of the trip from fifty pesos to fifteen.

Mr. George Holderer, of New York, accompanied me. Taking an early train, we reached Amecameca at 9:45, and having made arrangement beforehand, guides and horses were awaiting. We set out in a southeast direction, following the road which Cortez is said to have built between Popocatepetl and Ixtaccihuatl for the purpose of attacking Mexico City. But we left this road before reaching the saddle between the two mountains, and went to Rancho Tlamacas. This consisted of a few shacks and some iron retorts, formerly used in distilling sulphur. The sulphur was hauled out of the crater with a windlass and then skidded down the snow-covered sides of the mountain on grass mats with an Indian to guide each one. History states that at the time of the conquest Cortez sent Alvarado to the crater to get sulphur for the manufacture of gunpowder.

After a good night's sleep, we set forth at six o'clock. The temperature was 28° F., the same as at seven o'clock the night before. The date was January 16th, and the elevation at this point was about 12,500 feet.

We rode through fine volcanic ash, which was covered by the whitest frost I have ever seen, to snow line, where we dismounted near a small cross, which our guide told us was built on the spot where a peon, while cutting ice, had been hit on the head by a falling rock.

To our right was a little peak called Pico del Fraile, which juts out from the northwest slope of the mountain. So far as I have been able to learn, it has never been climbed. Its height above sea-level is 15,000 feet, and it rises about 500 feet above the saddle which connects it with Popo. The sides are almost perpendicular, affording a good opportunity for an ambitious climber.

The snow in front of us was smooth, and frozen as hard as marble. Fortunately, well-cut steps had been left by a former party, saving us trouble. It was a novel experience, after climbing on a snow-slope for two and a half hours, to come suddenly on the crater, a huge abyss, half a mile in diameter and 1,500 feet deep. At intervals, loosened rocks rattled down the precipitous walls, and from two holes on the far side there issued thick columns of steam, colored yellow by sulphur. Evidently Popocatepetl is trying to remain true to its name, which means "smoking mountain" in the language of the Indians.

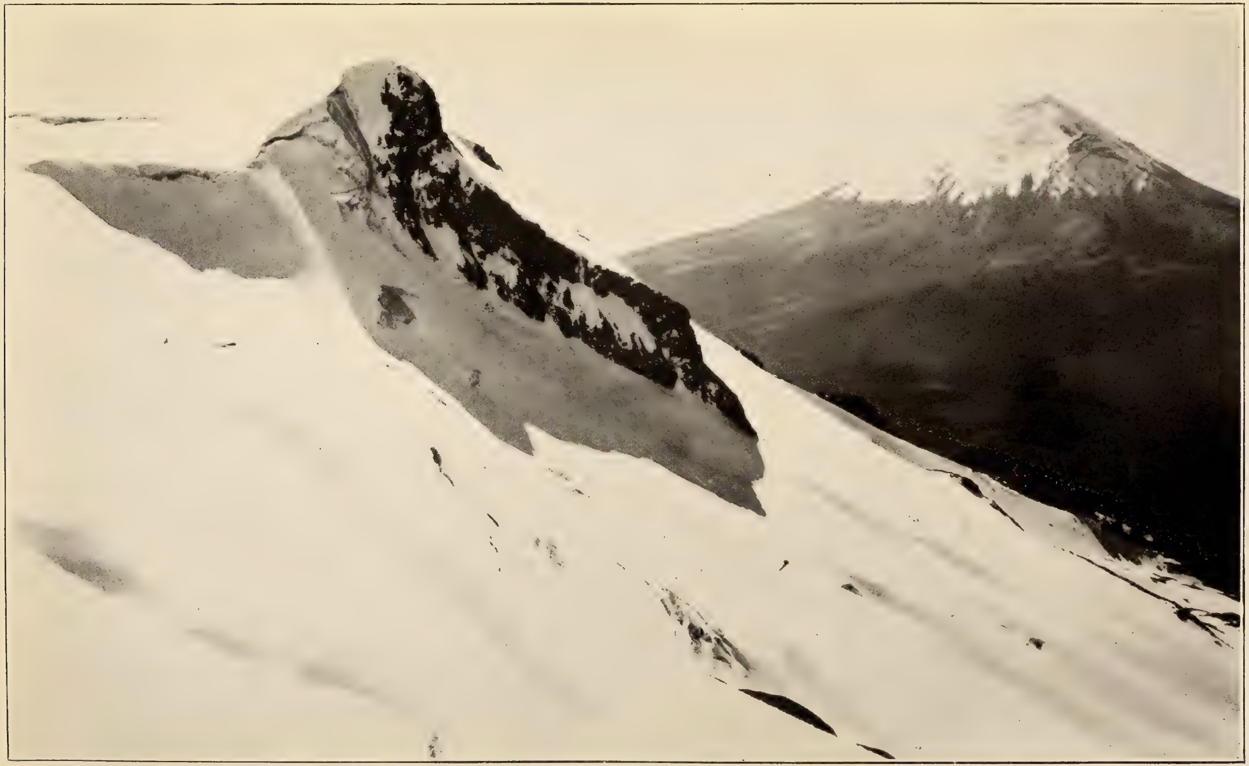
The rim of the crater is by no means horizontal. The mountain is a cone, truncated at an angle, the highest point being on the southwest side, about 700 feet above the lowest. The bottom of the crater is nearly level, and contained a little snow. The remains of the windlass and steel cable used in hoisting sulphur could still be seen. The odor of hydrogen sulphide was apparent, and a piece of lead foil lying on a rock had been blackened by it. That there still is heat in the mountain is demonstrated by the fact that the inside of the rim was free from snow, while on the outside it was four feet thick.

After an hour spent in taking pictures, we went on to the top, which took an hour and twenty minutes. Sierra Club Register No. 7 was deposited in a small pile of rocks, and then began the descent. We got back to the guides, who were a short distance below, and they assured us that it would be impossible to descend in the orthodox manner, i. e. by sitting on grass mats and sliding. The snow was so hard that, once started, we should have been unable to stop. We regretted greatly missing this slide, which is said to be one of the best things about climbing Popo, but there was nothing for us to do but to go down a step at a time. Near the bottom, where it was less steep, my friend tried sliding, and had quite an exciting time trying to stop, which he managed to do by using his kodak as a brake. On reaching camp we packed up, and started for Amecameca, where we arrived at 9:40, returning to Mexico early next morning.

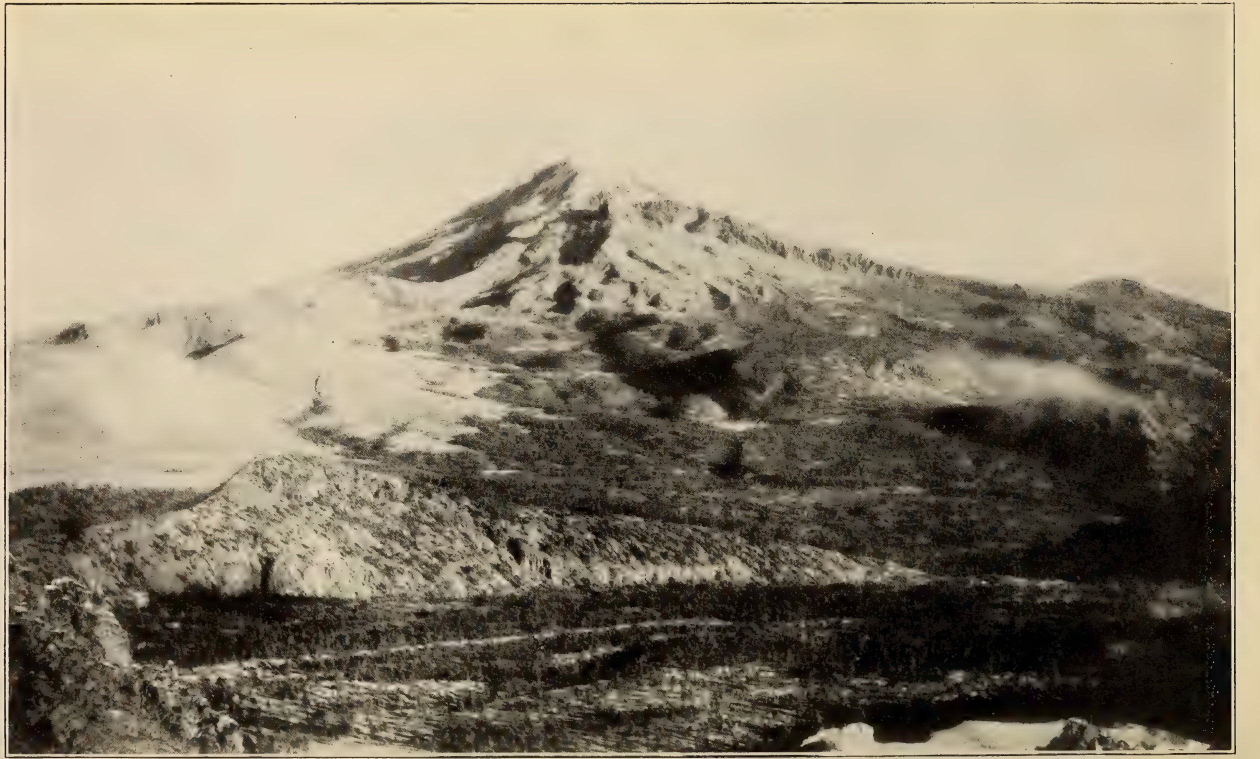
Ixtaccihuatl means "The Woman in White," and the resemblance can be seen without undue stretch of the imagination. The whole mountain represents the woman. She is lying on her back with head toward the north and feet to the south. And she is certainly white, for she carries more snow than any other mountain in Mexico, and several glaciers besides. The Indians have a legend which tells them that Ixtaccihuatl was the daughter of a rich chief. She loved a youth who had nothing, and when he came to ask her hand, the father would not listen to him and drove him away. Day by day the girl pined, till finally, as she was about to die, she was changed into this mountain, which even to this day preserves her form. Her lover became Popocatepetl, and stands at her feet, keeping eternal watch over her while she sleeps.

The mountain is reached from Amecameca. The trip takes just as long as the one to Popocatepetl, and the

PLATE XXXIX.



POPOCATEPETL FROM IXTACCIHAUTL.



IXTACCIHAUATL FROM THE SOUTH (POPOCATEPETL) AT SUNRISE, JANUARY 16, 1911.

same arrangements can be made for guides and horses. Instead of staying at the Rancho Tlamacas, visitors to Ixtaccihuatl remain over night in a cave at a height of about 13,000 feet. Of the two trips, Popocatepetl is by far the best if it be simply a matter of getting to the top. Popocatepetl is higher, and the first day's ride from Amecameca is more varied and beautiful, and the crater is some thing worth seeing. But because Ixtaccihuatl rises to a long ridge instead of a cone, and on account of the large amount of snow and ice which it carries, it offers greater possibilities in the way of ice, snow, and rock work, and there are a number of different ways by which it can be climbed. That part which represents the woman's head is especially difficult, being very steep on all sides. But I know of at least one man, a Swiss named Hiti, who has climbed it, and a friend of mine, a German, intends to try it within a few days. Climbers try this peak in genuine Swiss fashion, with ropes, ice-axes, and *Steigeisen.*

Amecameca is a town of 8,000 inhabitants, but covers a greater area than most Mexican towns of that population, because almost every house is surrounded by a garden. On setting out for Ixtaccihuatl, which lies to the east, one rides through the streets for at least a mile. Then the road runs between level cornfields to the base of the mountain, about three miles away. Here an old German has a small brewery beside a waterfall, but he is so lazy that he seldom brews enough beer even for his own consumption. From this point up the mountain rises steeply, and the road becomes a trail and winds on through forest. Here and there, in the cleared spaces where the slope is less steep, are found wheat and barley fields. There are numbers of trails going up the mountain. Its sides are smooth, being furrowed by only a few shallow cañons. There is one trail which passes through a beautiful little valley surrounded by high, rocky cliffs and spreading out into a wide, basin-like floor.

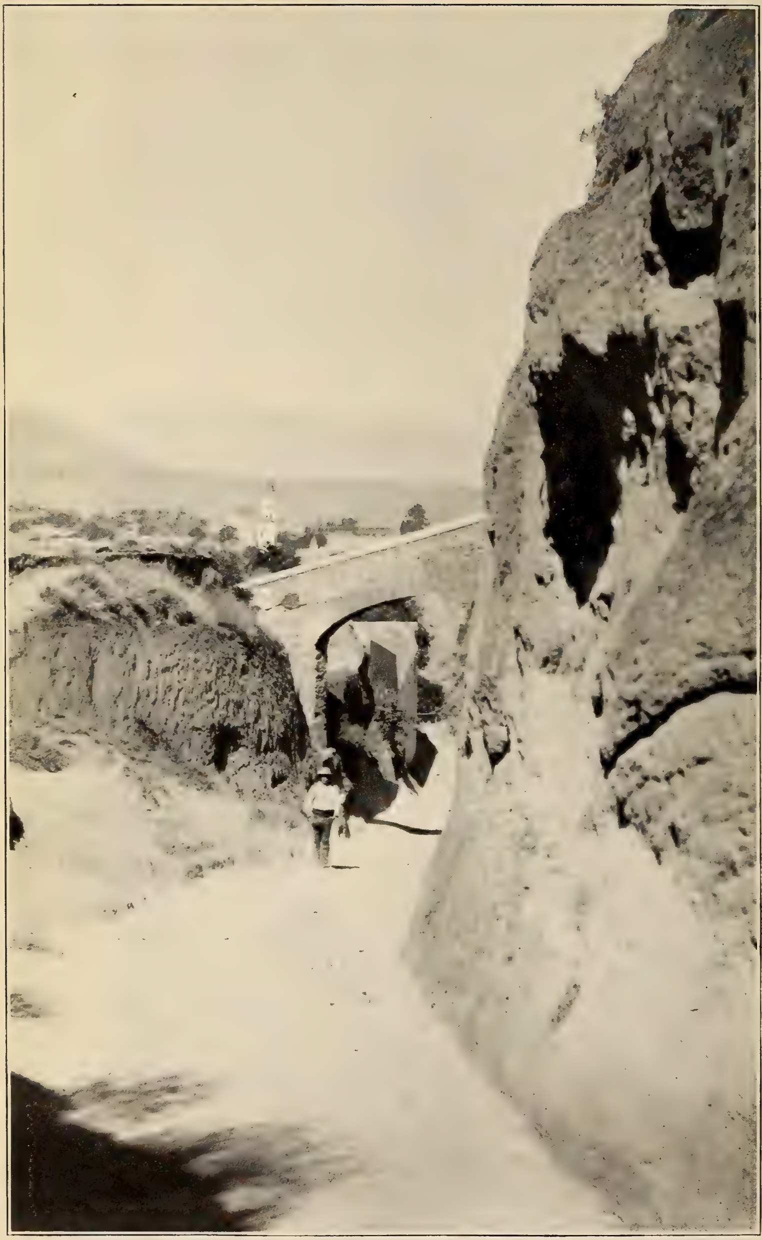
There has been some discussion as to whether Ixtaccihuatl should be considered a volcano or not, but there can be no doubt as to its volcanic origin. In the upper part, the successive lava flows can be distinctly seen. It is more rocky than its neighbor, Popo, and lacks the volcanic ash that covers the latter in some places. The cave where climbers are wont to spend the night is at timber line. The start for the climb is made at daybreak. It is not worth while to set out sooner, because the country beyond the cave is somewhat rough. The snow line can be reached in an hour's ride. The trail was built principally for getting ice and ends at the foot of a glacier. The glacier is to be avoided, if one seeks the easiest route to the top, and, turning to the left, the way is straight to the summit. The route is over rocks and gravel at first, then over deep snow, which for the last quarter of a mile presents a smooth surface, unbroken by rocks. The last hundred yards is steep enough to make step-cutting necessary.

There were five of us in the party, besides a considerable retinue of guides and *mozos*. I was fortunate in being the only member of the party who did not suffer from mountain sickness. Two of our number were prevented from making the ascent. Strange to say, the first man to turn back had climbed Orizaba successfully, and Orizaba is much the higher mountain.

On the top of Ixtaccihuatl are two rounded domes, nearly north and south of the slight dip between them, and of about the same height. They are a quarter of a mile apart. Everything is covered by smooth, hard snow, which presents an unbroken surface except for one crevasse just north of a half-dome of snow lying to the southeast of the other two domes. The west side of this half-dome is a snow cornice, which can be plainly seen from the base of the mountain. There being no wind, making the air seem warm in the sunlight, I stayed at the top for about an hour. The view is much the same as that obtained from Popocatepetl, the main difference being that Popo itself, and Lake Texcoco, a shallow, alkaline

SIERRA CLUB REGISTER, ETC., ON SUMMIT OF IXTACCIHUATL.

IXTACCIHUATL.



TRAIL FROM ORIZABA APPROACHING SAN ANDRÉS CHALCHICOMULA.

body of water just east of Mexico City, are included. Coming down was easy, with several places where sliding on the snow was possible; the rest of the way being gravel and loose rock. We all returned to Amecameca the same day and to Mexico City on the following morning.

The highest mountain in Mexico, and the third highest in North America, is Pico de Orizaba, or Citlaltepetl, as the Indians used to call it. It is situated less than a hundred miles west of Vera Cruz, and can be seen well out to sea in clear weather. While the approach from the west is over a plain having an elevation of more than 7,500 feet, from the east it rises practically from sea-level. It is a long slope, with the tropics at the base and glaciers at the top. The mountain is sharply pointed, but lacks the symmetry of Popocatepetl on account of a spur on the north side.

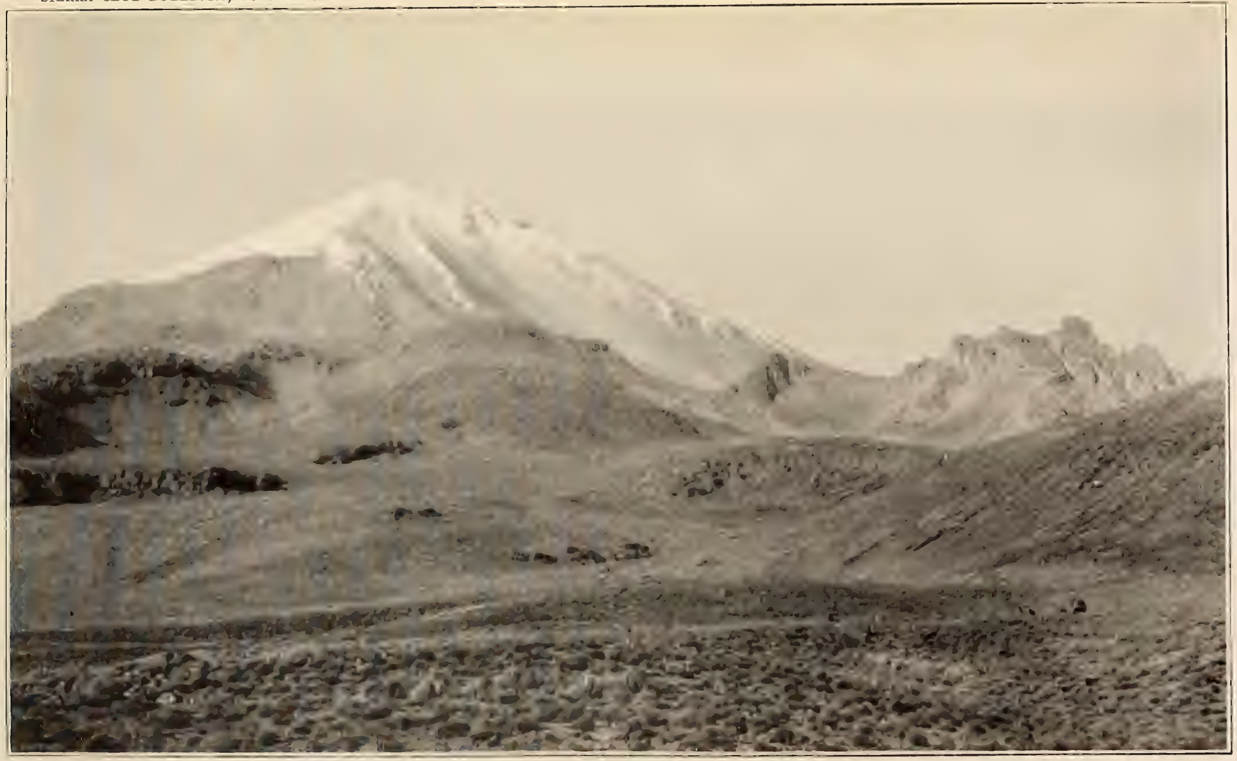
The usual, and most convenient way of approach is from the town of San Andrés Chalchicomula, in the State of Puebla, 220 kilometers east of Mexico, on the Mexican Railway. The town is eight kilometers from the station, and several little cars, first and second class, travel between the depot and the town at train-time. Four mules each are required to pull the cars up to the town, but, as there is an even grade, they coast all the way down again, the mules being sent on ahead. The country which these cars cross, and even the mountain itself, belong to a huge hacienda eighty kilometers long by thirty wide. San Andrés is an attractive little town of perhaps 5,000 inhabitants. Snow-covered Orizaba and the dark dome of Cerro Negro, a crater 15,000 feet high just south of it, fill a large part of the horizon in a direction north of east. The two mountains are about fifteen miles from the town.

The trip to the cave, from which the climb of Orizaba is made, is a very beautiful one. The road, or trail (it is half-way between the two) goes on a gentle up-grade to the suburb of San Francisco, passing at one place through a narrow cut, whose vertical walls are spanned by masonry aqueducts. Then rolling, cultivated country is crossed, until, five miles from San Andrés, the trail suddenly plunges into a fragrant pine forest. This forest deserves the name, being composed of trees over seventy feet in height and growing just far enough apart to give them room for symmetrical development. There is an occasional oak, and higher up firs are sprinkled among the pines. Here and there gray, aloe-like air-plants with pink blossoms cling high up on the trunks and branches. The forest begins at 9,500 feet and timber line is at 13,500.

The trail proceeds with a gentle grade straight for the mountain, whose shining peak is seen now and then over the tree-tops. Gradually it becomes steeper, though never steep enough to necessitate zigzags. The forest continues much the same nearly to timber line, above which the whole landscape is gray, save for the white triangle of snow above. The trail comes out on the saddle between the snow-peak and Cerro Negro, and there below, on the other side lies the "Hot Country"—not, as you might suppose, a sunburnt plain, but range after range of blue and purple mountains, stretching away to the southeast as far as the eye can reach and melting off into the paler blues of the tropic Mexican sky.

The cave, which is a small one and has none of the comforts and luxuries described in Swiss Family Robinson, is situated to the left of the trail, in the last group of pines that grow on the east side of a recent lava flow. There are several similar lava flows on this side of the mountain. Instead of cutting channels, like rivers of water, these rivers of rock remain as flat-topped ridges, with nearly constant width and thickness throughout their length.

A chilly two hours' ride awaits the ambitious climber, with a start before dawn after the night in the cave. Fifteen thousand feet is about as high as a horse feels like going with a man on his back, and the rest of the climb is a steady pull. At sea-level it would be easy, but here just one-half the earth's atmosphere is below us.



PICO DE ORIZABA, APRIL, 1911.

RETURNING FROM PICO DE ORIZABA.

Whether the climb is over snow or over rocks and gravel, depends on the time of year.

Orizaba, being a real volcano, is of course provided with a crater at the top, which, instead of being round, is shaped like a fat and much curved comma. It is much smaller than the crater of Popocatepetl, and, in order to see the bottom one needs to be let down by a rope, because the sides are sloping at first and then dipped to the perpendicular.

When the weather is good the view in all directions is the finest to be had in Mexico. To the southeast lie mountain ranges, high in reality, though low by comparison, as far as the eye can reach. Far away on the east, lies the gulf, sparkling in the sunlight. To the north are pine-covered mountains and on the west and southwest is the level valley of Puebla, about 7500 feet above the sea. In the middle of the valley rises a sharp peak called Malinzin, and on the far side are Ixtaccihuatl and Popocatepetl, beautiful and wonderful from whatever side you see them, because of the snow-covered whiteness of the one, and the height and symmetry of the other.

STEVENSON AND CALIFORNIA*

By Cornelius Beach Bradley.

Mr. President and Members of the Stevenson Fellowship: The intimate and personal interest I take in the little sheaf of Stevenson's Californian papers I cannot wholly account for by the fact that I am a loyal Californian, long rooted in this soil, and familiar both with the human types of our State and with the features and moods of her physical beauty. Nor can I account for it by the added fact that I am a student and admirer of the literary art which Stevenson has so happily employed in illustrating these things. Both these sources of interest I have, but both enhanced and heightened by a sense of having somehow been brought very really within the personal spell and charm of Stevenson's life. The man himself I never knew, nor even saw. But she who was to become the loving companion and solace of all his later years was a patron of the school in which I was then serving my apprenticeship. Her son, whose name was destined to be coupled with Stevenson's own in literary labor and in fame, and her daughter—afterward Mrs. Strong—were daily attendants in the classes there; while "Joe" Strong himself, the future artist and son-in-law, a lad all unconscious of impending fate, had for years been living in the face of our staid and precise Oakland community a most interesting and joyous life of perpetual picnic—father and brothers and goats, and photographic wagon and gaunt gray mare, forming with him as picturesque a group of Bohemians as one could wish to see. And in that school "Joe" learned the secret of that good fellowship and those

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*Response to a toast at a banquet in honor of Stevenson's birthday. Reprinted from the University of California *Chronicle,* Vol. XI, No. 2. Revised by the author for the Sierra Club Bulletin.

mysteries of the camper's art for which he is so worthily immortalized in the "Silverado Squatters." Even the yacht *Casco,* which was to bear Stevenson far away to Southern seas, was a familiar craft in our waters, and one on which I myself in those days had the pleasure of a cruise. Of the scenes of his sojourn here and the themes of his writing, Monterey was of course familiar, as it is to all old Californians; while St. Helena was the very first of Californian mountains that I ever climbed, and that some years before Stevenson's encampment there. It is but the other day that I climbed it again "for auld lang syne"—and Stevenson's sake.

A new physical region like California, and a new society like that which grew up here, demand the vision and the interpretive power of strangers to enable its people to see and to understand either themselves or their surroundings. The active participant in the organization of such a society is far too much engrossed and immersed in action to discern the real features and quality of the life he is shaping; nor has he time or inclination to muse on the scenery and appointments of the stage on which he is acting his part. All our real knowledge is knowledge of differences. Eyes that look out forever on the same scenes are the least likely to know those scenes in their inner essence and reality. The ocean of air in which we live and move and have our being has for us neither taste nor smell. We cannot know its savor at all, not because it has none, but because its is the fundamental and omnipresent savor—the basis by variation from which all other savors are distinguished and discerned. Nor are we in the slightest degree aware of the enormous weight and pressure with which it bears on our physical frames. In like manner, because of its very familiarity to us, the real quality of Californian scenery and of Californian life had to be distinguished and interpreted for us by others before we could rightly understand and grasp it ourselves.

It is a remarkable succession of these interpreters, gifted in various lines, which California has had from the pre-Californian days of Dana's voyage down to the present time. Not all have been actually strangers and foreigners here. Some, like Bret Harte, were actually participants, yet able amid the turmoil and bustle to preserve a detachment of spirit brought with them from elsewhere. Some even native born have been able to attain the necessary detachment through life for a time in other surroundings. Some, like Muir and Keith, have been no transient visitors—have loved us so well that they have taken us for better or for worse, and are Californians of the Californians forever more. Nor are they all writers. Some, like Yelland and Keith, are our foremost masters of color and form. But, with whatever exceptions, apparent or real, the broad fact remains that to the insight of strangers are we chiefly indebted for the revelation of California to ourselves and to the world. To them are we indebted more than we can ever know, not only for the joy we feel in the splendor of our earth and sky, the stately procession of our seasons, the majesty of our frowning mountains, the brightness of our flowing waters, the grandeur of our solemn forests, the loveliness of the flowers that carpet our hills and plains—but beyond these, for the charm and perennial interest which invest human life here of whatever degree or station, and for the hopes which like bright auroral dreams light up our vision of the future.

It is not my intention to detain you this evening with any extended comparison and criticism of the numerous workers in this broad field. Many of them are already forgotten. Many whose work still lives are for various reasons not available for comparison with Stevenson. The Southern Californians, for example, seem to form a class by themselves, dealing with a province distinct in climate, in physical features, and in its life, and appealing to a different temperament. Their California is not ours. The poets, too, belong to another world, the world of fancy and imagination. They rarely condescend to draw us a portrait of the actual world about them. The novelists concern themselves more than do the poets with the real form and circumstance of life, but only incidentally—as a means and not as an end. What they want is the *impression* of reality, and this they often attain in surprising degree with little or no personal knowledge of the scenes they describe.

Leaving then all these, and coming now to those who have directly addressed themselves to portraying the life and scenery of our California, and confining ourselves to the foremost names—whom do we find? For the earlier fiercer period of the rude physical conquest of the land, Bret Harte and Mark Twain for Californian life, with Clarence King for its mountain scenery and setting. For the later and more settled period of its humanization, Charles Warren Stoddard for the life, with John Muir, Yelland, and Keith for its landscape and setting. These are the men with whom Stevenson may be fairly compared. The work of that earlier group made a profound impression upon the world, and had an enormous vogue. Like the "Sturm und Drang" period which it celebrated, and like the life it endeavored to portray, it was weird and wild, full of fierce contrasts and contradictions,—it was sentimental, bizarre, melodramatic. So far, perhaps, its quality was justified as a reflection from its subject. But its sensationalism was so extreme, so deficient in the sanity and poise which belong to all great art, that not all its wonderful force could ever quite succeed in giving to the scenes it depicted any deep and abiding sense of reality. Already its tales read like romances of some impossible, some mythical age. Even Clarence King's famous mountaineering seems to those who have camped on his trail almost as unreal as Tartarin's.

Stevenson's Californian papers bulk far less than the work of any of these men. They are little more than specimens of what he might have done, had he found his home here rather than in the Southern seas. They have won us by no such sensational appeal. They have crept into our homes and our hearts almost unnoticed. But their clear, steady vision, their simplicity, their power of sympathetic interpretation, their delicate and masterly art, place them in quite another category than those.

The second period was the period of conscious organization,—the beginnings and development of permanent institutions and social life. It was a period of immense importance and varied interest, still little trammeled by convention, and filled with vivid memories and traditions of its own more picturesque and more turbulent past; but aspiring now to a more rational self-consciousness, and eagerly welcoming whatever might contribute to that end. Its serious business was, very largely, taking account of stock. Its chief literary activity was no longer creative, but scientific and statistical, displaying itself in an eager search for all historical data which might throw light on its new origin, and for a science which should put it into rational possession of its own fair earthly heritage. It was the period typified, let us say, by Bancroft's Histories and the Geological Survey. Its product, therefore, was not primarily literature, but rather the raw material of literature out of which our present ephemera of novels and short stories are so largely constructed. This lull in literary production during the 70's and 80's was frequently remarked upon at the time, and will be easily recalled by all who knew California in those days. Yet there was a group of men who were not unmindful of their high calling—poets all of them, though in different kind: Sill, Keith, Yelland, Muir, Charles Warren Stoddard; and into this group by accident of fate for one brief season came Stevenson. His coming here was indeed an accident, but not the genius which guided and shaped him so surely for his place beside these men. Nor is it an accident that of those five distinguished Californian artists, three were Scotchmen, and that Stevenson makes the fourth in the group of six. Recall what Matthew Arnold has said about the magic power and charm in dealing with nature which the Celtic strain has brought into English literature—a charm quite unknown to our prosaic Anglo-Saxon temperament, and equally foreign to the Norman genius for government and affairs—recall this, and be glad that so large an infusion of Celtic genius went into the making of our nascent Californian art.

These six I have named as well known and typical, not meaning thereby to exclude any others who rightfully may claim to stand beside them. But this group, however constituted, it pleases me to think of as the original Stevenson Fellowship, of which your own organization is the loyal and worthy continuator, maintaining as they did, in the face of an unbelieving time, the old faith in noble ideals, the old tradition of the high calling of art, and the old love of the Good, the True, and the Beautiful.

Permit me to glance for a moment at the differing genius of these men, and at the relation between Stevenson's work and theirs. Sill was the true poet, with far-reaching and unifying vision which refuses to be confined to the provincial and local aspects of life. No considerable portion of his works is distinctly Californian in subject and treatment. In this he stands apart from the rest, who are all artists in *genre*. Muir and Keith, *nobile par fratrum,* hard-headed canny Scots on the one side of them, rhapsodists and religious mystics on the other; self-taught artists both, devoted to landscape and mountains; both in their highest moments laying upon heart and imagination a marvelous spell of mystery, tenderness, and awe, with an aerial uplift of phantasy which suffuses the whole like an atmosphere! Yelland gives us more exactly the outward form and aspect of the things he sees, and with a certain unfailing dignity and eloquence; but he rarely rises into the realm of poetic illusion. Stoddard, like Yelland, bears the distinct impress of his time, and all its concern for exact knowledge and truthful record. But both are artists, and their record of fact is suffused with a tender grace of the heart which raises it far above all the prosy head-work which filled that period. The grace which invests Stoddard's work is the grace of tender memories. Much—perhaps most—of his best work is really personal reminiscence taking shape long after the events. And beyond the range of his own recollection, he summons the help of history and tradition, that he may reach ever farther and farther into that romantic and stirring past which once sat enthroned where now the prosy and vulgar present is driving its sordid bargains. The light of other days is almost the only sunshine which warms his canvas. This note it is which gives the characteristic—almost feminine—touch to so much of Stoddard's work.

To Stevenson, California afforded no such background of memories. Here he could write only of what he saw immediately before him. In this he is like the painters, who can put no yesterday and no to-morrow into their pictures. But what a treasure of interest he found in the passing moment! How keen and sure was the vision of those eyes, and how true the skill that recorded it! How unfailing the kindliness and good humor, the cheerful courage, the unfeigned human interest in all that went on about him! How surprising that the long torment of his journey hither, added to the weakness and pain of wasting disease, should have left no gloom in his heart to dim the splendor of that sunrise on San Francisco Bay, or the glory of that starlit drive on St. Helena, or the witchery of the forest-aisles of Monterey where silence becomes audible through the deep, thrilling, ever-present murmur of the sea! And then the kindly shrewdness and quiet humor of the human types he has sketched: the hunter's family, the children of Israel, the "brither Scot" who remembered how when a child his father had put him inside the grim mouth of Mons Meg, the Mexican, the Indian,—and his grave concern as to the outcome for these last in the presence of our aggressive American civilization.

Stevenson's writing on California was least in amount of all the work we have been considering. It is scanty indeed as compared with the total mass of his own writing. None of it, moreover, was of that creative order by which Stevenson's name is to endure in the world. But it is pure literature, sane and sound as the heart that made it, and of the very best of its kind ever attempted here. We are eager and proud to claim him as our own. Short as was his sojourn with us, for him it was momentous, fateful, in a certain sense determining all his subsequent career; and for us memorable as the visit of an angel whom we entertained unawares,—an angel who, as he left us, bore away with him gifts which he never ceased to prize as the most precious things in his life, and who, as a souvenir of his visit, sent us from afar this little casket of gems which not even the splendor of his greater works can make us Californians undervalue. And this gift draws us by a stronger compulsion than is laid on any others of our countrymen to love and admire that gentle spirit whom long trial proved to be

> "One equal temper of heroic heart,
> Made weak by time and fate, but strong in will
> To strive, to seek, to find, and not to yield."

EARLY SUMMER BIRDS IN THE YOSEMITE VALLEY

By J. Grinnell.

When the visitor first enters Yosemite Valley along the stage road from El Portal his attention is wholly absorbed by the grandeur and variety of the scenery. Even the habitual bird-observer is distracted from his favorite objects of scrutiny; and doubtless this accounts for my own impression at the end of my first day in the Yosemite, that birds were few in species and individuals. But as the days go by, and the wonder inspired by the roaring waterfalls and towering cliffs begins to sink into the commonplace, the faculties become freed for the contemplation of various other natural features of the region, and these among both plants and animals present themselves in multifarious plenitude. Each day's tramp, in whatever direction, brings additions to the observer's list of birds, until at the end of a ten days' stay an astonishing total is reached, especially as compared with that first impression. Then, too, certain places are discovered where particular species are to be found in notable numbers; so that the conclusion reached is that in abundance and variety of its bird life Yosemite is at the very least as well provided for as any other part of the West of similar climatic and floral qualifications.

In the immediate vicinity of any of the camps on the valley floor the bird which first gains the notice of the newly arrived observer is the Western robin—so like his relative of the Atlantic states, that only actual comparison of specimens suffices to distinguish them. Robins hop familiarly along the paths between the rows of tents, or dash in heedless flight close past the many people. Often a robin will permit an approach as close as ten feet, especially when foraging on the greensward of the meadows among the tethered ponies. At times during the day one hears bursts of robin melody. But at early morning and late evening the robin chorus pervades far and wide what would otherwise be a nearly perfect stillness. The trite word "carol" to my mind and ear describes the robin's song satisfactorily; and several robins caroling at once furnish a type of bird music unapproached in pleasing quality by any other species that I have ever heard.

Robins have a difficult time to get settled for the night. While juncos and warblers become quiet before sundown and vanish from sight and hearing by early dusk, the robins have by then set up a din of wild cries intermingled with snatches of song. This is kept up until the gloom of the forest on the valley floor has settled into night, and only Glacier Point, Half Dome, and similar heights show a lingering reflection of the sunset sky. At daybreak the robins are again noisy, but for a much briefer period.

Another bird attracted rather than repelled by the populous village of tents is the black-headed grosbeak, here the boldest member of the finch tribe. Scraps from our table are his for the gathering, and he flies in his quest almost within arm's length of us. But all the while his air is alertness incarnate, and the least offensive movement on any one's part sends him off with a flash—black, white, and tan. One must put into practice the well-known art which has been learned by the successful observer of wary birds—wear a constant appearance of absolute indifference, move deliberately, and at the same time watch intently. The black-headed grosbeak is of loud rollicking voice, and sings at all times of the day. He does not range above the valley floor; in fact, he is one of the lower-zone birds, found also down to sea level, and here associates with the many other birds peculiar to the yellow-pine belt of the Sierra. We watched a female grosbeak nest-building in a blossoming chokecherry thicket close to Stoneman Bridge, May 24th.

A bird to be heard oftener than seen is the Cassin vireo, also a frequenter of human environs. Its song is of several accentuated notes, so modulated as to suggest a query, and at the proper and measured interval, its reply. This dignified and emphatic refrain resounds rather loudly through the incense cedars and black oaks, forming an appropriate accompaniment for the shrill songs of the warblers.

This is surely a paradise for the warblers, using this last term in the restricted sense as designating a certain family of small foliage-frequenting birds. No less than eight species were in evidence on the valley floor, all doubtless nesting, though not all in exactly the same places. The "rare" hermit warbler, with yellow head and black throat, was not rare at all in certain stretches of young yellow pines and black oaks. One was seen hurriedly gathering nest material from the roadside; but she laid her zigzag course too far off among the trees to be followed successfully, and we had to give her up. The hoarse-toned drawl of the black-throated gray warbler indicated its presence wherever the dense-foliaged golden oaks clothe the talus slopes, as up the Yosemite Falls trail.

Audubon warblers were as common high in the lodgepole pines of Eagle Peak Meadows and Little Yosemite as on the valley floor, and thus bore the distinction of ranging through as great an altitude as the golden pileolated warbler, which we saw in the willow thickets on the Happy Isles trail, and in a patch of leafless poplars close to snow-banks in Eagle Peak Meadows, 3000 feet above. The California yellow warbler adhered closely to the deciduous trees of the valley floor, though contrariwise the only nest we found was in a young incense cedar. The MacGillivray warbler was found only in the willow thickets and fern patches on the valley floor. One Western yellowthroat was closely observed, May 29th, at the margin of a meadow near Stoneman Bridge.

The find productive of intensest delight was a nesting site of the Calaveras warbler. Several of the birds were seen, always along the foot of the cliffs, and one day, May 26th, as the result of a hasty scanning of a boulder's mossy face, a bit of something out of order was perceived. And this tuft of yellowed grass ends, standing out in contrast against the green and olive, proved to be a part of the rim of a nest deeply ensconced in a fissure of the rock, which fissure was everywhere else smoothed over with the moss matting. The nest held five delicately dotted eggs.

On a later visit we surprised the bird on the nest, but she slipped off slyly and disappeared, as she must have at the time we first discovered the nest. We remained around until the bird's anxiety overcame her shyness, and we finally obtained excellent views at close range of both birds. Also their excited notes of alarm, brought other species, out of curiosity or sympathy, and we were afforded the sight of both ruby-crowned and golden-crowned kinglets in the same tree overhead—so similar in colors and manners, but so totally different in voice.

This reference prompts me to dwell upon the wonderful loudness of the song, or a portion of the song, of the ruby-crown, for the size of the bird. One often hears this clear, unmistakable whistle shrill out across a cañon from some distant silver fir with distinctness that is startling, and which fully warrants the novice in looking for a much larger bird.

The brilliantly plumed bird of the valley is the Western tanager, not at all wary and present in numbers. The yellow body and red head form a color combination which prevents confusion with an oriole or a goldfinch, neither of which low-zone birds, by the way, were found by us in the valley. A tanager's nest, in process of construction on May 26th, was certainly beyond reach of any climbing depredator. Its site was the end of an outswaying branch of a Douglas spruce, fully sixty feet above the road; and to this the female was carrying building materials with total indifference to the presence of the spectators below.

The near vicinity of waterfalls and roaring cascades appeared to repel most birds, very few indeed seeming to enjoy their proximity. The blue-fronted jay with its tall crest and very dark hues, was one bird, however, which we saw close to both Vernal and Nevada falls, even in the spray-drenched trees at the very foot. The jays were noted elsewhere, too, though the silence which characterizes their nesting season doubtless led to our considering them less common than was really the case.

We wondered if it were not the continual noise of the cataracts that rendered their neighborhood objectionable to birds of song, like vireos, robins, warblers, and thrushes. At any rate these were seldom or never seen in such localities. Still, one bird of song, the water-ouzel, disported itself with frequent bursts of melody right in the spray of roaring rapids. And we were fortunate to locate two winter wrens, both close to the raging torrent below Vernal Falls. A stroke of still better luck was our finding the nest of one of the winter wrens. This nest was a globular affair of green moss in a tangle of fine roots dangling beneath the butt of a prostrate log, twenty feet from the main stream and directly over a small tributary. By the use of a mirror to throw a beam of light up under the dark log, we were able to make out the nest opening and the mouths of four small young which gaped wide when the parent bird brought them food. The mother showed little fear of us, and despite our manipulations in trying to get pictures, continued her breathless endeavor to bring green larvæ and millers and crane-flies enough to satisfy the mouths.

There was but the one parent, and we thought it possible that some hungry trout, of which we saw two lurking in the stream which dashed but thirteen inches beneath the nest, had gobbled up her mate. A winter wren is certainly not too large to make a comfortable mouthful for a fair-sized trout with a full-sized appetite!

The following list of fifty-five birds contains only those species recognized with certainty by the writer and his wife, and within the valley proper, or along its walls as high as Eagle Peak, or in Little Yosemite. The period of observation extended from May 22d to June 1, 1911; at least half of each day was spent in tramping about, though the much-traveled trails were tabooed as far as practicable.

The beginning bird student will find adequate descriptions of all these birds, and additional ones which will doubtless be found to occur in the valley, in Bailey's "Handbook of Birds of the Western United States," (Houghton, Mifflin and Company, 1904).

1. Spotted Sandpiper. *Actitis macularius.*
2. Mountain Quail. *Oreortyx picta plumifera.*
3. Sierra Grouse. *Dendragapus obscurus sierræ.*
4. Band-tailed Pigeon. *Columba fasciata.*
5. Mourning Dove. *Zenaidura macroura carolinensis.*
6. Golden Eagle. *Aquila chrysaëtos.*
7. Belted Kingfisher. *Ceryle alcyon.*
8. Cabanis Woodpecker. *Dryobates villosus hyloscopus.*
9. White-headed Woodpecker. *Xenopicus albolarvatus.*
10. Northern Pileated Woodpecker. *Phlœotomus pileatus abieticola.*
11. California Woodpecker. *Melanerpes formicivorus bairdi.*
12. Red-shafted Flicker. *Colaptes cafer collaris.*
13. White-throated Swift. *Aeronautes melanoleucus.*
14. Calliope Hummingbird. *Stellula calliope.*
15. Olive-sided Flycatcher. *Nuttallornis borealis.*
16. Western Wood Pewee. *Myiochanes richardsoni.*
17. Western Flycatcher. *Empidonax difficilis.*
18. Traill Flycatcher. *Empidonax trailli.*
19. Wright Flycatcher. *Empidonax wrighti.*
20. Blue-fronted Jay. *Cyanocitta stelleri frontalis.*
21. Brewer Blackbird. *Euphagus cyanocephalus.*
22. California Purple Finch. *Carpodacus purpureus californicus.*
23. Pine Siskin. *Spinus pinus.*
24. White-crowned Sparrow. *Zonotrichia leucophrys.*
25. Western Chipping Sparrow. *Spizella passerina arizonæ.*
26. Sierra Junco. *Junco oreganus thurberi.*
27. Lincoln Sparrow. *Melospiza lincolni.*

28. Thick-billed Fox Sparrow. *Passerella iliaca megarhyncha.*
29. Spurred Towhee. *Pipilo maculatus megalonyx.*
30. Black-headed Grosbeak. *Zamelodia melanocephala.*
31. Lazuli Bunting. *Passerina amœna.*
32. Western Tanager. *Piranga ludoviciana.*
33. Violet-green Swallow. *Tachycineta thalassina lepida.*
34. Western Warbling Vireo. *Vireosylva gilva swainsoni.*
35. Cassin Vireo. *Lanivireo solitarius cassini.*
36. Calaveras Warbler. *Vermivora rubricapilla gutturalis.*
37. California Yellow Warbler. *Dendroica æstiva brewsteri.*
38. Audubon Warbler. *Dendroica auduboni.*
39. Black-throated Gray Warbler. *Dendroica nigrescens.*
40. Hermit Warbler. *Dendroica occidentalis.*
41. MacGillivray Warbler. *Oporornis tolmiei.*
42. Western Yellow-throat. *Geothlypis trichas occidentalis.*
43. Golden Pileolated Warbler. *Wilsonia pusilla chryseola.*
44. Dipper or Water-Ouzel. *Cinclus mexicanus unicolor.*
45. Dotted Cañon Wren. *Catherpes mexicanus punctulatus.*
46. Western Winter Wren. *Nannus hiemalis pacificus.*
47. Sierra Creeper. *Certhia familiaris zelotes.*
48. Red-breasted Nuthatch. *Sitta canadensis.*
49. Slender-billed Nuthatch. *Sitta carolinensis aculeata.*
50. Mountain Chickadee. *Penthestes gambeli.*
51. Western Golden-crowned Kinglet. *Regulus satrapa olivaceus.*
52. Ruby-crowned Kinglet. *Regulus calendula.*
53. Russet-backed Thrush. *Hylocichla ustulata.*
54. Sierra Hermit Thrush. *Hylocichla guttata sequoiensis.*
55. Western Robin. *Planesticus migratorius propinquus.*

The following articles have been published relative to birds of Yosemite Valley:—

1893. Emerson, W. O. Random Bird-notes from Merced Big Trees and Yosemite Valley. *Zoe* IV, July, 1893, pp. 176-182.
1898. Ray, M. S. A Summer Trip to Yosemite. *Osprey* III, December, 1898, p. 55.
1904. Widmann, O. Yosemite Valley Birds. *Auk* XXI, January, 1904, pp. 66-73.
1908. Keeler, C. A. Bird Life of Yosemite Park. *Sierra Club Bulletin* VI, January, 1908, pp. 245-254.
1910. Torrey, B. The Western Winter Wren in the Yosemite. *Condor* XII, March, 1910, p. 79.

Museum of Vertebrate Zoology, University of California, June 4, 1911.

SIERRA CLUB BULLETIN

PUBLISHED JANUARY AND JUNE OF EACH YEAR.

Published for Members. Annual Dues, $3.00.

The purposes of the Club are:—"To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada Mountains."

ORGANIZATION FOR THE YEAR 1910-1911

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Committee on Local Walks.—Mr. E. J. Mott (*Chairman*), Mr. Harold French, Mr. C. W. Pohlmann, Mr. J. E. Rother, Mr. Geo. Edwards.

Le Conte Memorial Lodge Committee. — Mr. E. T. Parsons (*Chairman*), Prof. J. N. Le Conte, Miss Lydia Atterbury.

Librarian—Miss N. Taggard.

REPORTS

REPORT OF THE SECRETARY.

May 7, 1910, to May 6, 1911.

The Club's growth during the past year gives strongest evidence of healthy vitality. There was a net increase of 144 members during the year, the total membership now being 1,400. A total of 229 new members joined the Club and 85 were dropped from the list by reason of death, resignation, and non-payment of dues.

The Club purchased an addressograph since the membership list had become quite unwieldy, and this investment has proven a very considerable help to the Assistant Secretary. A small amount was spent on trail work and planting of golden trout. The cost of publishing the Bulletin has increased so materially that the Directors are taking steps to keep this expense within bounds. In view of all this, the financial balance shown by the Treasurer's report is very satisfactory, since it indicates a slight gain over last year's balance.

The Club has been working actively on many matters of public interest. Among other things, it has urged the establishment of a National Monument to include the Devil's Post Pile and Rainbow Falls on the Middle Fork of the San Joaquin, the enlargement of the Sequoia National Park to include the wonderful region embraced by the headwaters of the Kings and Kern rivers, the creation of a Bureau of National Parks, and the preservation of Niagara Falls, etc. The National Monument will undoubtedly be established in the near future, the Sequoia Park project and the proposed Bureau of National Parks may take some time to attain, but are bound to prevail in the end, and while the legislation preserving the Niagara will not be all that was sought to be accomplished, its integrity seems assured for the next two years, and the Burton Bill will be extended for that length of time.

The Club was presented with several albums of very interesting photographs taken on the 1910 Outing, and Mr. M. H. McAllister donated a striking framed enlargement of a Mt. McKinley photograph, which now hangs in the Club Room. The thanks of the Club are extended to these generous donors.

The extensive and successful fish planting done last year in the High Sierra under the supervision of the Club in co-operation with the California Fish and Game Commission, is work that will result in increasing pleasure to those who visit these regions in the future and will add tremendously to their attractions.

The local walks have become more and more popular under the able and enthusiastic management of the Committee on Local Walks, headed by Mr. Ernest J. Mott, Chairman. Climbs of Mts. Diablo and St. Helena were made during the spring and an excursion taken to the State Redwood Park. A winter excursion to Yosemite Valley proved a delightful experience to many. Some of the members in Los Angeles have become interested in having local walks in the south, and it is to be hoped that their efforts will meet with success.

The Club Outing this year to the Yosemite National Park has proved to be more popular than ever. On May 20th, when deposits were required to be paid, every place was filled and quite a long waiting list was made up of those anxious to secure possible vacancies. The Committee was forced to refuse a large number who subsequently applied. It is extremely regrettable that these could not be accommodated, but past experience has demonstrated that the success of the Outing depends upon strictly limiting the size of the party. If the popularity of these Outings increases with the growth of the Club, some means will have to be devised to accommodate all who may apply. Possibly two separate Outings may be the solution.

Respectfully submitted,

WM. E. COLBY, *Secretary.*

REPORT OF THE TREASURER.

MAY 7, 1910, TO MAY 6, 1911.

GENERAL FUND.

Receipts.

Cash on hand May 6, 1910		$1,925.19
Cash received from Wm. E. Colby, Secretary—		
Dues	$3,919.02	
Advertisements (June, 1910, part of January, 1911, BULLETIN)	445.00	
Rent of Club Room	160.43	
Sale of BULLETINS	17.00	
Sale of Club Pins	37.80	
Refund of *Appalachia* postage balance	22.00	
Interest on Savings deposits	29.55	4,630.80
		$6,555.99

Expenditures.

Publication of Bulletin No. 42	$ 761.30	
Publication of Bulletin No. 43	1,101.37	$1,862.67
Distribution of Bulletin No. 42	102.50	
Distribution of Bulletin No. 43	102.50	205.00
Cash advanced for mailing Bulletin No. 42 to Appalachian Mountain Club		75.00
Salary of Assistant Secretary (12 mos.)		600.00
Rent of Room No. 402, Mills Building		360.00
Stamps, circulars, and stationery		519.03
Le Conte Lodge in Yosemite, salary custodian	$105.00	
Addition to equipment	93.37	198.37
Equipment of room		191.64
Additions to library		22.70
Rental of telephone		64.05
Advertising expenses		98.75
Trail work in Sierra Nevada		97.50
Fish planting—Sierra Nevada		50.00
Local walks		56.90
Purchase of Club Pins		30.00
Public lecture		87.85
Express		35.32
Taxes, telegrams, and sundry small bills		32.95
Total expenditures		$4,587.73
Cash on hand May 6, 1911:		
On deposit in First National Bank	$1,153.71	
On deposit, Savings & Loan Society	424.44	
On deposit, Security Savings Bank	373.94	
Cash in Secretary's drawer	16.17	
Total cash on hand May 6, 1911, in general fund		$1,968.26
		$6,555.99

PERMANENT FUND (LIFE MEMBERSHIPS).

On deposit in Security Savings Bank, May 6, 1910	$ 762.90
Interest accumulated during year	29.51
New life memberships during year	100.00
Total on deposit in Security Savings Bank, May, 1911	$ 892.41

Respectfully submitted, J. N. Le Conte, *Treasurer.*

REPORT OF LE CONTE MEMORIAL LODGE COMMITTEE.

During the summer of 1910 the Le Conte Memorial Lodge was open to the public from the middle of May until the first of August, and although the season was short, several hundred more visitors registered than in any previous year.

The books formerly belonging to Galen Clark's library and presented to the Sierra Club by Mr. George Fiske were installed at the Lodge.

The herbarium holder, subscription for which was started by Mr. Alden Sampson in 1909, was set up. Prof. C. B. Bradley kindly undertook to plan and oversee its construction, and a hundred specimens of the collection begun the previous summer were mounted and enclosed in envelopes with celluloid face, ready for exhibition. This exhibition of plants was extremely interesting to the visitors, but as one hundred plants, the capacity of the present holder, must fall short of even the popular plants of the Park, another holder is urgently needed.

The Club is greatly indebted to Mr. Charles D. Kellogg, the noted lecturer on birds, who during a visit to the valley most generously gave a lecture for the benefit of the lodge. The sum of eighty-six dollars was realized. This money will be spent for much needed furniture, to be known as the gift of Mr. Kellogg.

As the picking of flowers in the valley is rightly discouraged by the superintendent, Major Forsyth, a substitute for the flower exhibition formerly held was found in the beautiful collection of water-color studies of the flora of the park made by Miss Hutchinson, of Los Angeles. Through the kindness of Miss Hutchinson an exhibition of these studies was held and greatly enjoyed by all fortunate enough to come to the lodge during those days.

Persons taking trips to the outlying portions of the park often find it a hardship to return to the valley for supplies. Stations in Tuolumne Meadows and one or two other places in the northern portion of the park, where campers' supplies could be obtained would be of great service and also encourage the exploration of the higher altitudes. It is suggested to the Directors that the Sierra Club use its good offices in furthering the establishment of such supply stations, and also in the matter of marking trails and giving distances authoritatively.

Respectfully submitted,

E. T. PARSONS,
J. N. LE CONTE,
LYDIA ATTERBURY,
Le Conte Memorial Lodge Committee.

NOTES AND CORRESPONDENCE.

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comments and suggestions on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, fish, forests, trails, geology, botany, etc., of the mountains, will be acceptable.

The office of the Sierra Club is Room 402 Mills Building, San Francisco, where all Club members are welcome, and where all the maps, photographs, and other records of the Club are kept.

The Club would like to secure additional copies of those numbers of the SIERRA CLUB BULLETIN *which are noted on the back of the cover of this number as being out of print, and we hope any member having extra copies will send them to the Secretary.*

WILLIAM KEITH—Nov. 18, 1838—Apr. 13, 1911.

There are few members of the Sierra Club whose death could cause greater and more widespread grief than that of William Keith. He was born in Aberdeenshire, Scotland, and died at his home in Berkeley. The greater part of his life was spent in California, and his paintings of the "California Alps," as he used to call the Sierra, are masterpieces. We have lost a master painter, but his wonderful work, which was the expression of his best rare qualities, is still with us and in that sense he is immortal. Our sincerest sympathy is extended to his widow. Mr. Keith was a charter member of the Sierra Club.

WILLIAM RUSSELL DUDLEY—1849-1911.

The eminent botanist, William Russell Dudley, died at Stanford University on June 4th. He was born in Guilford, Connecticut, was a member of the faculty of Cornell University for sixteen years, and was connected with Stanford University since 1892. He was for many years a member of the Board of Directors of the Sierra Club, until failing health compelled him to resign. He attended some of the Club Outings and many of our members will recall his lovable personal qualities. He was very active in advancing the cause of Forestry in this State and the creation of the State Redwood Park was probably as much due to his influence and effort as to that of any other one person. We all feel his loss most keenly.

ROOSEVELT ON SCENIC BEAUTY.

On the occasion of the reception given to Colonel Theodore Roosevelt by the Faculty Club of the University of California a copy of Professor Willis Linn Jepson's book entitled "The Silva of California" was presented to the honored guest of the evening. The speech of presentation was made by Professor Bernard Moses, who spoke as follows:—

"My friends and colleagues, Mr. Roosevelt, wish me to give expression to the sentiments which you have inspired in them by your call to public righteousness and your efforts to conserve to us and our children the natural resources and the natural beauties of our country. They also wish me to give you this volume, by Mr. Jepson, on the forests of California.

"We of California, as all the world knows, are a modest folk. We seldom boast of our State; we only say very simply that the Lord never made a better land than this. But notwithstanding our modest reticence, we are proud of our heritage, our hills and valleys, our forests and mountains. We like our mountains, and are glad that no man can pull them down and put them on the market. We like our forests, but already the hand of the spoiler is stretched out towards them, and, unless resistance is offered, the glorious aisles of these nature temples, which no man built, may yet become the waste places of the universe.

"We are profoundly grateful to you, sir, for your efforts to stay the destruction of the spoiler. To you and to some of us, nature is something more than a mass of objects to be torn asunder, and to be gathered in heaps and sold. Nature presents an appeal to our sense of beauty; and, in the case of our magnificent forests, which stand in solemn grandeur, it awakens those higher sentiments akin to adoration. But every worship must have its books of devotion, and for us, in our devotion to the forests of California, one of our colleagues, Professor Jepson, has prepared this book for our guidance. In the name of this little company, in the name of the University, in the name of the author, whose work has conferred honor not only upon us and the University, but also upon the State which gave him birth, I beg leave to present this volume to you; and in doing so let me offer the wish of all of us, that your voice may continue to ring true yet these many years."

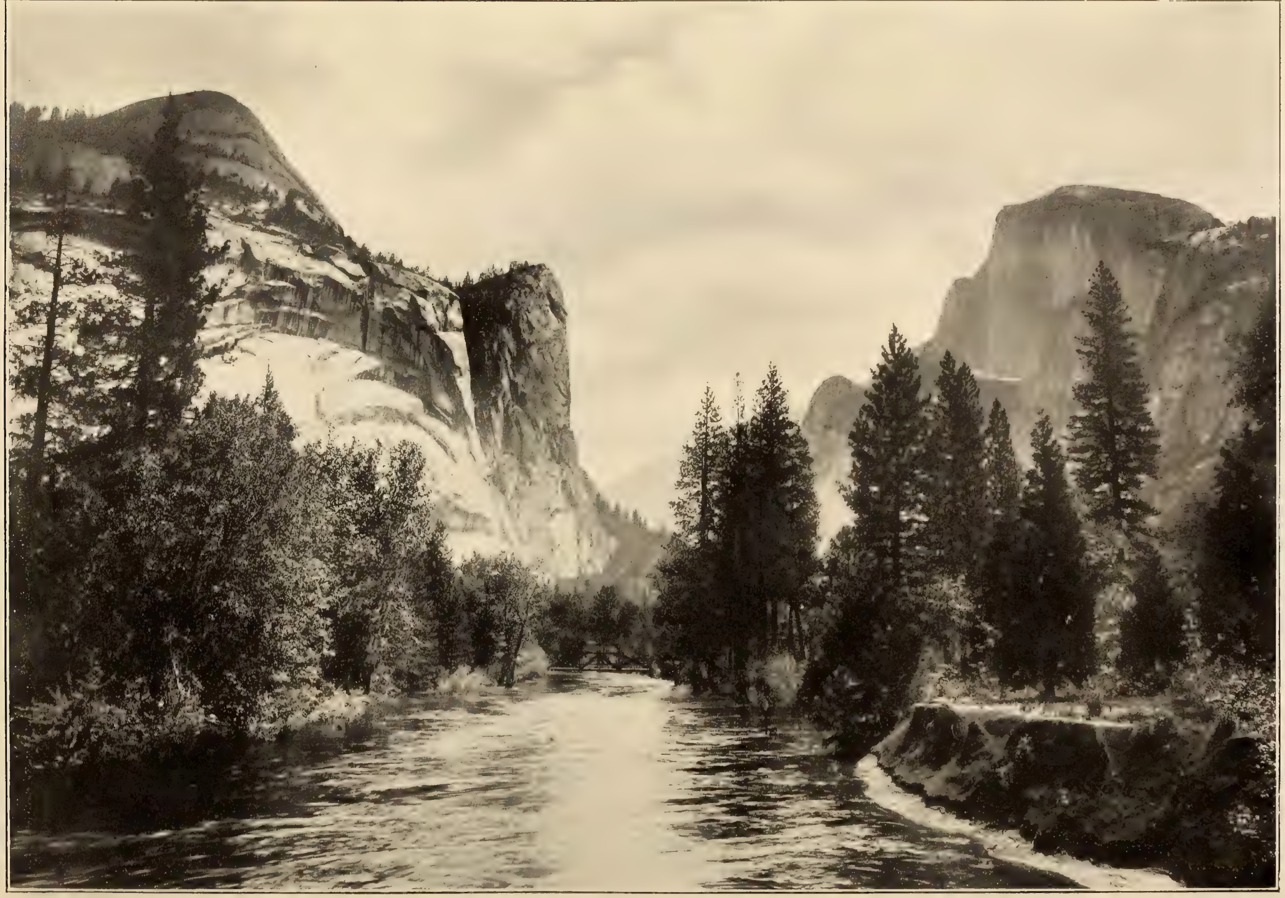
In his response Mr. Roosevelt began by expressing his thankfulness for the book. Turning over the pages and looking at the text and illustrations, he declared that it would be useful in telling him what he most desired to know about the forests of California. "This State," he said, "has been dowered with beauty. If there is any country finer than California I do not know it. All the tones of nature are within its border. This country has glorious mountain ranges and valleys, splendid forests, great snow-peaks, the wonderful sequoias—and for all these things none of you deserve the slightest credit. (Applause and laughter.) The progress of true civilization is best shown by the increasing thought which each generation takes for the good of those who are to come after. You can ruin its forests, you can dry up its streams, you can hack and scar its surface until its marvelous beauty is gone. The preservation of the forest resources of this State, especially, is of vital importance to the commonwealth. I go farther. No State can be judged to be really civilized which in the treatment of its natural resources does not take account of, or aim to, preserve the beauty of the land in which its people live. An æsthetic as well as economic factor is involved in the problem of conservation. Poor, indeed, is the conservation which does not also conserve beauty.

"There is another matter of which I would like to speak in relation to the sequoias. Don't mutilate them. Don't let others mutilate them. Don't use them for advertising. I was amazed to see the trunks of the big trees at Santa Cruz covered with visiting and business cards. It seems inconceivably vulgar for a man to attach his worthless name by means of paste-board to these giants of the forest! In Egypt I actually once observed how a man had gone about with a pot of paint putting his name on the temples and pyramids. I wish I had been guardian of Egypt; I should have put him through a course in æsthetics by forced marches. I hope that this commonwealth will continue in the course it has taken and remain a watchful guardian of its natural resources and the beauty of its scenery."

OLD TIOGA ROAD TO BE ACQUIRED.

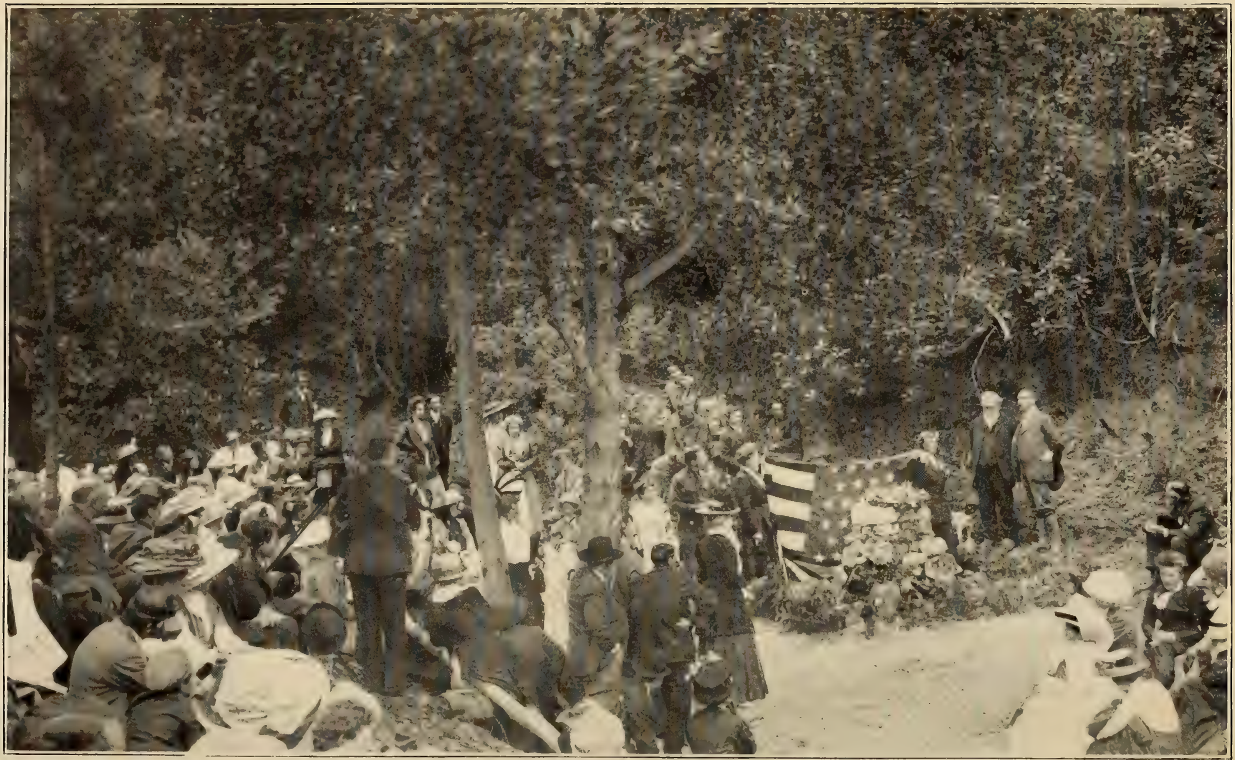
The following news item appeared in the daily press last April:

"The Government brought suit in the United States Circuit Court yesterday to condemn an unused toll road in order to make it part of the new system of roads through the Yosemite National Park. The road begins at Crockers station, Tuolumne County, and extends through a corner of Mariposa County into Bennettsville, Mono County. It was built in 1883 by the Great Sierra Consolidated Silver Mining Company, and is fifty-six miles long. When the mines ceased to operate in 1892 the road was allowed to fall into disuse. W. C. N. Swift, as successor to the company's claims, is named as defendant."



NORTH DOME, ROYAL ARCHES, WASHINGTON COLUMN, HALF DOME, YOSEMITE. SIERRA CLUB CAMP-SITE, 1911, SHOWS ON BOTH SIDES OF THE MERCED RIVER.

Photograph by Pillsbury Picture Company.



UNVEILING THE STEVENSON MONUMENT, MT. ST. HELENA, MAY 7, 1911.

DEDICATION OF STEVENSON MEMORIAL.

Professor Glenn Allen has furnished us with the following account of the establishment of a Stevenson Memorial on Mt. St. Helena:

"The first step taken in the work of erecting a tablet to mark the site of the cabin where Robert Louis Stevenson lived on Mt. St. Helena, began two years ago, during Mrs. Percy S. King's second term as president of the New Century Club, of Napa. About that time the members of the New Century Club voted, in order to expedite their work, and to diffuse interest in different directions, of their large membership, to form sections. One of the five sections then formed was the History and Landmarks Section, which at once became popular with the members, and also the pioneers of Napa. Mrs. P. S. King named Mrs. P. F. Powers as chairman, and she selected Mrs. A. C. Johnson as her secretary. In November, 1909, outlined plans, with other material, including a strong editorial from the St. Helena *Star* "urging that steps be taken to mark this spot," were read and approved by the History and Landmarks members. The Secretary soon had the necessary letters written, permission was obtained from the Pattens and Lawleys on Mt. St. Helena, and the work began in earnest.

"Garden parties and teas started the fund, a Stevenson program was given at the New Century Club; then came the united assistance of the other clubs in Napa County, and success was assured.

"The following clubs gave their support: Napa Study Club, Browns Valley Woman's Improvement Club, St. Helena Woman's Improvement Club, Calistoga Civic Club, and the Dramatic Section of the New Century Club, of Napa. The upper portion of this memorial tablet is a pink Scotch granite book, on which is inscribed: "This tablet placed by the Club Women of Napa County marks the site of the cabin occupied in 1880 by Robert Louis Stevenson and bride while he wrote 'The Silverado Squatters.'"

On the opposite page is a quotation from Stevenson's poem "In Memoriam," and because of his early death and his wonderful nature it seemed especially fitting to him:—

"Doomed to know not Winter, only Spring, a being
Trod the flowery April blithely for a while,
Took his fill of music, joy of thought and seeing,
Came and stayed and went, nor ever ceased to smile."
—R. L. S.

The principal address at the dedication of the monument was delivered by Mr. Alexander McAdie, Vice-President of the Sierra Club. He spoke as follows:

"Ladies and Gentlemen: I am sorry that the President of the Club, Mr. John Muir, is not here to honor the occasion and pay a lasting tribute to the genius of his fellow-countryman. He is on his way to South America; but I feel sure he would want me to express his regret at not being present; and to say that we feel his spirit is present on this occasion.

"If you offer a Scotsman a sprig of heather, he at once unbends. It matters not how repressed and self-contained he may have been before, he now becomes gracious, genial and, if the thing were possible for a Scot, loquacious. He recognizes in the token, evidence of a kinship of feeling; he knows that the things he has been taught to hold precious will be likewise dear to you. Something of the same kind happens when a stranger speaks well of the fog in the presence of a San Franciscan. For these dwellers in the Bay valleys love their fog and he who speaks kindly of it, when so many disparage, wins at once a way to their affection. And as no one ever wrote more charmingly of the sea-fogs than Robert Louis Stevenson, it goes without saying that he is dear to the people who live near the Great Gate where rolls the fog in stately strength and beauty.

"You will recall one never-to-be-forgotten morning here at Silverado when the fog rolled in. In two jumps he was out of bed and on the platform: 'Far away,' he says, 'were hill-tops like little islands. Nearer, a smoky surf beat about the foot of precipices and poured into all the coves of these rough mountains. The color of that fog ocean was a thing never to be forgotten. For an instant among the Hebrides and just about sun-down, I have seen something like it on the sea itself. But the white was not so opaline, nor was there, what surprisingly increased the effect, that breathless, crystal stillness over all. Even in its gentlest moods, the salt sea travails, moaning among the weeds or lisping on the sands; but that vast ocean of fog lay in a trance of silence, nor did the sweet air of the morning tremble with a sound.'

"Stevenson came naturally by his love of the mists, clouds and fogs and all out-of-doors life. He was born in that

> " 'Land of brown heath and shaggy wood,
> Land of the mountain and the flood. . . .'

and his fellow townsman, Sir Walter might have added

> " 'Land of engineers and much east wind.'

"Our fogs were kinder to Stevenson than the fogs of his native land; and perhaps if he could have remained here under somewhat more favorable conditions, his health would have been re-established. But be that as it may; from here he saw the fog from *above;* elsewhere he saw it from *below.* Who shall say that he did not gain inspiration therefrom, enabling him to see humanity, likewise from a high vantage ground. Certainly he knew the dull and sombre side of life: and just as certainly did he try to show the bright, romantic and hopeful side of existence.

"'As the sun brightens the world, so let our loving kindness make bright this house of our habitation.'

"There speaks a man who saw the good side of his fellowmen and sought to make them gentler by the contagion of his own unselfishness.

"Stevenson lived, back in the 80's at 608 Bush Street, within a stone's throw almost of the building where the Sierra Club has its rooms. It is not of record that he ever went on one of our outings; but literature would have been the richer by one rare volume had he gone. His pen would have done justice to the grandeur of crag and pass and meadow. The stern-faced cliffs that color so warmly in the morning light, as if behind the granite features yearned kindly, human souls; the blackness of night under the pines, the stillness of noonday in the forests, the nearness of the eternal stars: these would have appealed to him.

"He would have delighted in the camp and its drolleries. You recall that in the "Amateur Emigrant" he defines the difference between the Intermediate and the Steerage passengers. The former paid a little more; and had the privilege of saying whether they preferred tea to coffee, though as far as Stevenson could decide after trial there was no difference in the two. Well, we Sierrans have seen our tea made in coffee pots and our coffee in the wash-boiler. And many a time we have not even had the privilege of saying which we preferred. Then again Intermediate Emigrants had tables to eat from while the Steerage had none. In this respect the Sierra Club is distinctly in the steerage.

"Stevenson's life in San Francisco was at once both sad and hopeful. He was out of his proper setting and out-at-the-elbows in health. He came so near dying that he composed his epitaph, which later in a somewhat modified form appeared as the well-known requiem—

"'Home is the sailor, home from the sea,
And the hunter home from the hill.'

"In that first rough draft of his own estimate of himself, his final, as it seemed to him at the time, review of the book of life, Stevenson included these words, 'of a family of engineers.' Yes, there were engineers in his family and in his race. Watt and Rankine and Thomson and a host of level-headed, far-seeing master minds who harnessed the expansive power of water-vapor so that the winds and the sea bar not man's progress nor stay his passage round the world. The same processes that work in the steam engine operate in the clouds, and looking up into the sky, this "winged creature that would vanish to the uttermost isle" and yet sprung from a family of engineers, hard, practical, but who shall say unromantic men, must have seen in the clouds the unharnessed forces of nature, and likened himself to the inconsequential mist driven and drifting before the wrathful winds. Some suggestion of his own human restlessness must have come from these high wanderers. Ships of that greater sea, sailing an unsounded, uncharted, boundless ocean of overhead blue, like one of these he felt himself to be. At times scraping along under a jury mast, again carrying topgallant sails. Driven by favoring or adverse winds, he came at last to pleasant ports.

"Ever these words written in the loneliness of his stay in that crowded, gay and thoughtless city that we barely see from here, far on the southern horizon, ring in our ears, and perhaps best tell the purpose and ambition of his life: 'Can I make some one happier this day before I lie down to sleep?'

"We are grateful to the ladies of the united Ladies' Clubs of Napa County that they have placed this stone to commemorate the happy hours of the honeymoon spent here. I must also mention the full measure of service given by Mr. Daniel Patten, who gave the site and whose hands placed many of the stones here set, and to his able helpmate, busy at this moment that others may enjoy, and to Mr. Newman for the design, and Mr. Miller for the work done in setting the stone.

"Far in the West where lie the isles of the Pacific there he made a home. And the islanders who looked up to him as clansmen do to a chief, said, when the pen dropped from his hand and the day's work was done, 'Tofa Tusitala' (Sleep, Tusitala).

"We can say no more. Gladly he lived, he laid him down with a will, he earned rest; and the memory of the man and his work is as bright as the sunshine and as beautiful as the clouds."

SUGGESTION FOR 1911 OUTING.

Professor Harold C. Bradley writes from Madison, Wisconsin:

"I am much interested in your trip for the summer [the Sierra Club Outing], and cannot refrain from making one suggestion. I notice the itinerary leads from Tuolumne Meadows to Benson Lake via Matterhorn Cañon. It passes near a peak which commands one of the most comprehensive views of the entire region. That is Doghead Peak just east of Tallulah Lake and but a short distance off the main trail as it swings west from Wilson Creek. The peak can almost be climbed on horseback by following up

Wilson Creek, and it commands the whole wide sweep of the crest to the north, east, and south, from the peaks at the head of the Stanislaus, down along the sawteeth at the heads of the cañons within the park, across to the Sawtooth Range and Matterhorn, Dunderberg, Dana, Conness, Lyell, Ritter and Banner, and beyond to the south. From it the walls and domes of Yosemite are visible, the wall of the Grand Cañon, Hetch Hetchy, and glimpses of the lowlands in between. I know of no single peak which stands so thoroughly in the middle of things as this Doghead fellow. He will repay anyone for the climb."

AN EARLY ASCENT OF MT. WHITNEY.

Mr. Carl Rabe of Oakland made one of the earliest ascents of Mt. Whitney on record. This was on September 25, 1873, when he was attached to the State Geological Survey. He left San Francisco for Owens Valley in company with Mr. Belshaw. They took two sets of instruments and two barometers. The following extract from an account of his experiences furnished to the editor of the SIERRA CLUB BULLETIN is interesting:

"We went first to Cerro Gordo, where three or four days were spent in comparing the barometers and making preparations for the trip. I then returned to Lone Pine, where I left one of the barometers with R. A. Loomis, who agreed to take half-hourly observations from 10 A. M. till 2 P. M. for three consecutive days, viz., the 6th, 7th, and 8th of September, respectively, at Lone Pine. On the morning of the 4th of September I started for Mt. Whitney, accompanied by W. L. Hunter, William Crapa, and Mr. McDonnell, all of them from Cerro Gordo.

"We followed from Lone Pine the Hockett trail up the steep and often precipitous slopes of the eastern front of the Sierra; across the summit of Long Valley we left the trail, and turning northerly over a hilly region covered with loose granitic sand and boulders, we found ourselves, after a few miles travel, in the bottom of the deep cañon of a branch of the Kern River, which heads at the southwestern base of the peak that has been so long mistaken for Mt. Whitney, viz., Sheep Mountain. We were obliged to travel down this cañon southwesterly for several miles through boggy meadows, thickets of willow, and among fallen trees and large boulders, before we could find a place to climb out of it on the northern side. Judging from the masses of debris which are scattered about, the snowslides here would appear to have been frequent and heavy. We at length succeeded in getting out of the cañon and making our way for a few miles further over the rugged country to the north.

"After about twenty miles' travel from Long Valley, involving a very hard day's work for our animals, we camped the evening of the 5th at 5:30 P. M., at no great distance from the base of Mt. Whitney. At this camp, which was perhaps fifty feet below the timber line, the barometer at 6 P. M. read 20.440 inches. On the next day, September 6th, we left camp at 6:30 A. M. and reached the base of Mt. Whitney itself at 7:30 A. M. It was not yet apparent how we were to climb this colossal peak.

"But following my companions in silence, and keeping a sharp lookout ahead, I at last spied a crevice going up among the crags which seemed to offer a way. This crevice appeared to be about 10 feet wide, with a slope of some 45 degrees. Keeping to the larger boulders, I slowly worked my way through it. All around me, in wild confusion, lay the wrecks of avalanches. Taking a rest I saw my companions making with full speed for the summit. There are some six or eight of these crevices to be passed in succession, and this is undoubtedly the hardest portion of the ascent. It is best to keep to the larger boulders on account both of ease and safety. For one is liable to dislodge the smaller ones; and the slope is so steep that when one is started it is liable to carry others in its train. I found the ascent, though not particularly dangerous, extremely laborious and very slow.

"Below the altitude of 10,000 feet it went pretty easily, but the last 4,000 feet demanded, of me at least, frequent stoppages to get breath. I felt relieved always after stopping a few minutes; but the sensation of relief lasted only a very short time, and after a few steps more of climbing I had to stop again to get breath. Thus the higher I got the slower I went. All of us reached the summit one after another. I was the second last, McDonnell being the last. On the summit all looked rather tired. I felt dull and heavy and a little sleepy. I did not desire to eat anything. All had their eyes more or less bloodshot. The blood settled under my finger-nails, and the ends of my fingers, of the hand with which I supported the barometer all the way up, felt slightly numb. We were at the summit of Mount Whitney about 10 o'clock. I suspended my barometer, which I had brought up unbroken, and found that the mercurial column stood at 17½ inches, which would give us roughly a height of between 14,000 and 15,000 feet.

"We shall not be able to tell the exact height until I shall hand my observations to Mr. Goodyear, who will find the calculations to result as follows: Lone Pine itself has an altitude of 10,981.5 feet; add this to the best determinations yet made, which is 3,917 feet, and the total height of Mt. Whitney is 14,898 feet."

[A very careful and accurate determination of the height of Mt. Whitney, made by the U. S. Geological Survey a few years ago, gives the real altitude of the mountain as 14,501 feet.—EDITOR.]

San Francisco, April 6, 1911.

Mr. William E. Colby,
Secretary Sierra Club,
Mills Building, San Francisco, California.

My dear Mr. Colby: I am surprised and exceedingly sorry to hear that there is an impression that the Forest Service is in any way opposed to the policy of national parks. This idea is entirely contrary to the facts, for I am, and always have been, emphatically in favor of a vigorous national park policy. I believe, however, that we should not only have national parks comprising those areas which should be handled primarily with a view to the preservation of their scenic beauty, but there should be a well-defined policy with regard to the permanent development of each of the parks in accordance with the purposes for which they were established. In administering the national forests we are preparing, as fast as possible, working plans which consider the development of each forest for a long period in the future. We determine the amount of timber and other resources, the productive capacity of the forest, and plan the work of development so that the purposes of the forest will be carried out consistently in the future. There is usually a general plan for a whole tree-rotation, then a more specific plan for a period of ten years, and finally an annual forest plan for the work of the ensuing year. The national parks should be so organized that similar plans could be developed, having in view, of course, their protection and improvement from the standpoint of scenery and other general public benefits.

At one time I believed that the best plan would be to combine the administration of the national parks and the national forests. While this unquestionably would be the most economical method of administration, there are various reasons why it may be wiser to have a separate bureau of national parks. I have, therefore, given my hearty approval to the idea of a bureau of national parks and have advocated it both in private and in my public addresses. I think that you will find that the impression that I am opposed to the parks is unwarranted. Very sincerely yours,

H. S. Graves, *Forester.*

Note.—This letter was written in response to an inquiry as to the attitude of the Forest Service toward the National Park problem. We are glad to be able to publish this eminently satisfactory reply.—The Editors.

PROPOSED TAMALPAIS AND TAHOE NATIONAL PARKS.

BERKELEY, CAL., Dec. 20, 1910.

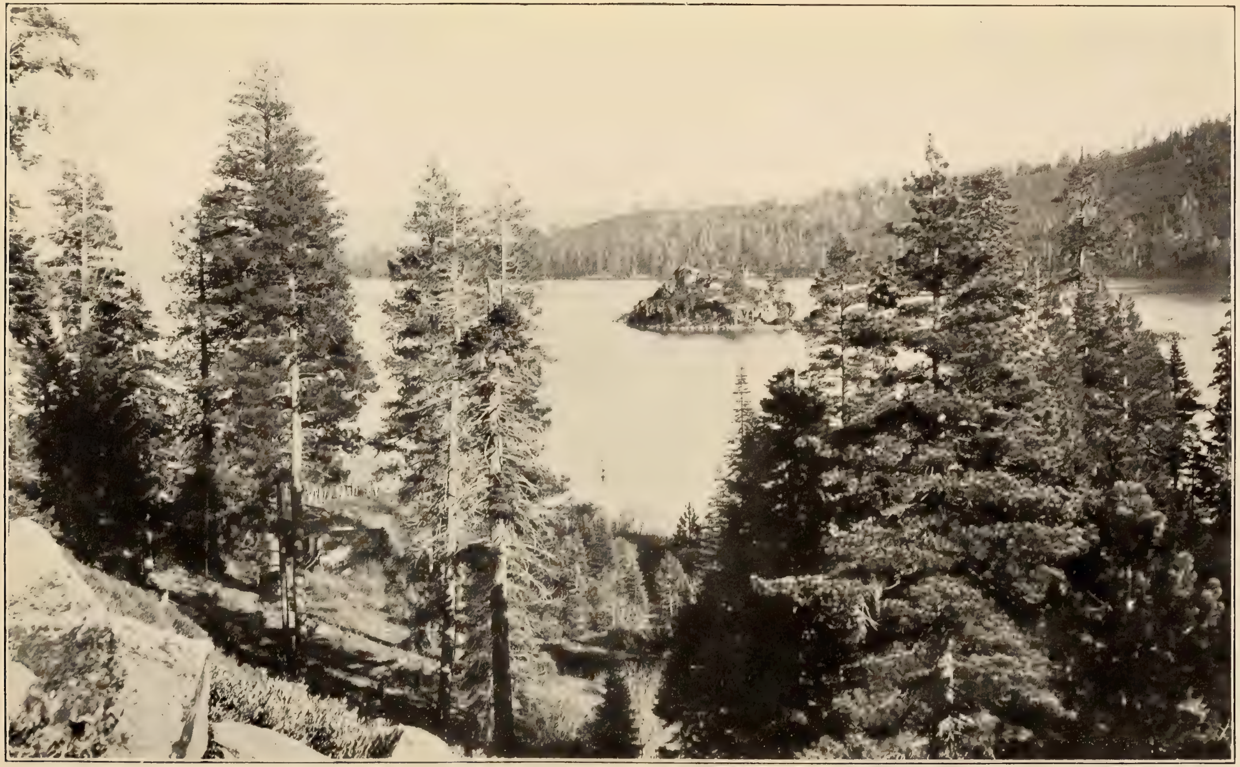
MR. WILLIAM E. COLBY,
Secretary, Sierra Club.

Dear Sir:—I beg to call the attention of the Directors of the Sierra Club to two projects which many members deem in accord with the altruistic purposes of this organization; namely, the proposed John Muir and Fremont National Parks.

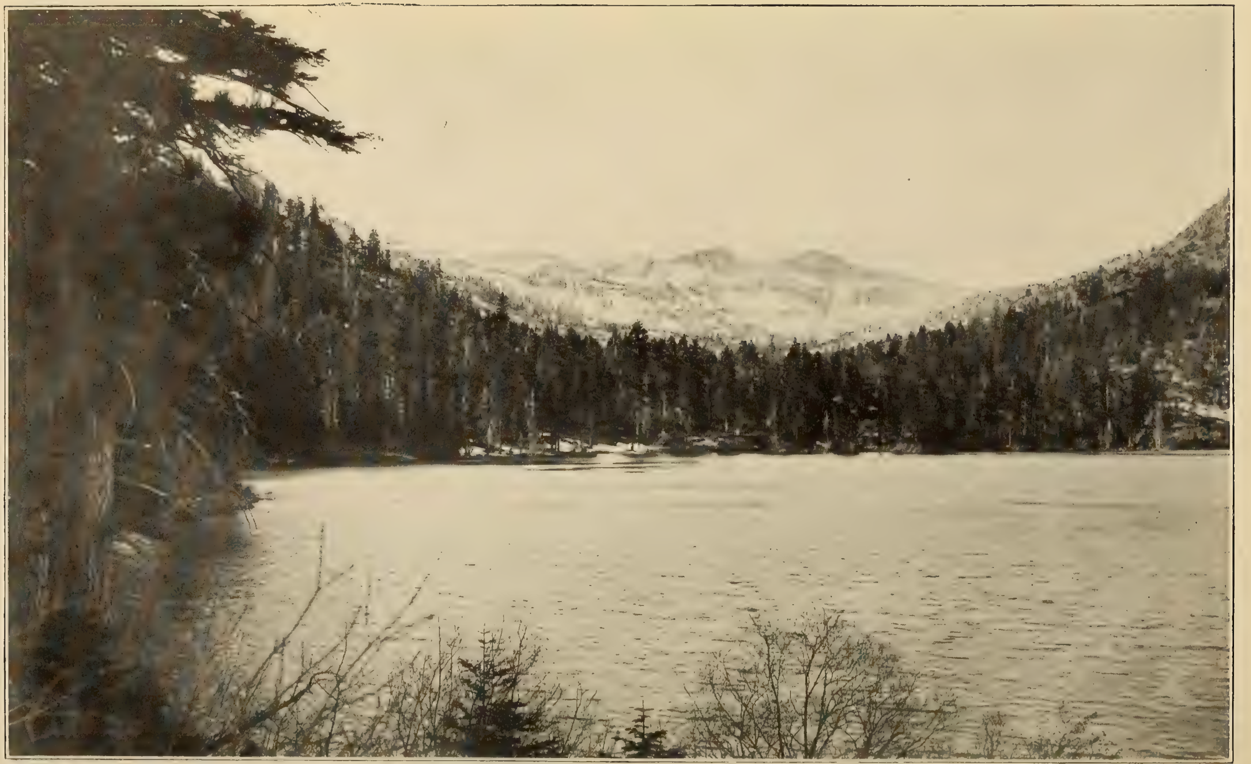
Probably all Sierrans who have enjoyed our week-end walks among the little wildernesses of Marin County will agree that the Tamalpais region should be preserved in all its natural beauty before it is too late. Recent developments confirm our belief that the time is now ripe for the Sierra Club to take some concerted action whereby these nearby wildwood retreats may be acquired by the Nation as a public playground for the millions who may learn to love our Tamal-land just as we cherish our Sierran places of delight.

It is our idea that the present National Park of 295 acres, known as Muir Woods, given to the Government by the generous William Kent, Congressman-elect from that district, should be extended up through the heavily timbered fork of Sequoia Cañon, crossing the western half of the sky-line of Mt. Tamalpais, and continuing in a generally northerly direction over the watershed of Lagunitas Creek and its tributaries, Cataract Gulch and the Big and Little Carson cañons. It should also appear advisable to include the crest of the Bolinas Ridge, southward from the vicinity of Camp Taylor and including Steep Ravine. The Bolinas Ridge is of rare scenic charm and commands a panorama of thousands of square miles of the blue Pacific, 2,000 feet below. It also merits reservation for military purposes, as well as for pleasure-seekers, for the reason that it commands the anchorage of Bolinas Bay, where at present a hostile force might land with ease, and, under the cover of the guns of its fleet, move with but trifling resistance upon the defenses guarding the Golden Gate. Those who are conversant with military and foreign affairs will realize the possibility of such a rear attack upon San Francisco in the future.

Apart from what may be called "sentimental" reasons for the reservation of the Tamalpais region, this last consideration would justify the expenditure which this park project would involve. Were this untenanted wilderness acquired for these joint purposes, military roads might be constructed to such strategic points as the vicinity of Rock Spring and along the panoramic Bolinas Ridge. In an emergency guns could be readily trans-



EMERALD BAY, LAKE TAHOE.
Photograph by W. L. Huber.



FALLEN LEAF LAKE AND GLEN ALPINE GORGE.

Photograph by W. L. Huber.

ported and emplaced there. At the present time only faint trails traverse these upland ridges and ravines, and an army, even on the defensive, would be at a great disadvantage under present conditions. I may state that a number of officers in the Regular and State service have expressed their opinion that the reservation of about 20,000 acres of this wild broken region would be well worth the few dollars per acre this land would cost, just for the purposes of defense and field maneuvering.

In conclusion, I venture the suggestion that the Directors of the Sierra Club investigate the feasibility of awakening a general sentiment in favor of extending the present John Muir National Park over such portions of the Tamalpais region as may be desirable for park and military purposes as well. It is possible that such interest taken by the Sierra Club and kindred organizations would lead to favorable Congressional action in the near future.

THE FREMONT NATIONAL PARK.

The Native Sons of the Golden West held a convention at Lake Tahoe in June, 1910, and adopted resolutions favoring the formation of a new National Park from the Tahoe forest reserve. On account of the historic importance of Donner Lake, they have included portions of its watershed in their tentative plans. A bill will be introduced in Congress, probably during the next session, authorizing the creation of this National Park for the reasons of its scenic charms and historic significance. As this region was first explored by the intrepid Pathfinder in 1844, it is suggested that this park be made a monument to his memory.

Last summer some thirty Sierra Club members, under the leadership of Mr. E. J. Mott, explored the interesting High Sierra overlooking this magnificent lake and the headwaters of the American River. They returned with glowing descriptions of the wonders of Desolation Valley, the glacier lakes and flower-starred meadows, snowy peaks and sparkling trout-streams.

All Sierrans familiar with this entrancing Tahoe forest reserve will welcome the idea of making this delightful wilderness better known as a National Park, and we may well extend our cooperating hands to the Native Sons by supporting their public-spirited project.

"Our National Parks" amid "The Mountains of California" are everlasting monuments to the altruistic idealism of John Muir, and we as his disciples should keep up the good work of park-making whenever opportunities will permit.

Very respectfully,

HAROLD FRENCH.

FORESTRY NOTES.

How the Forest Service Is Preparing for the Fire Season.*

The work that has received the most attention for the last few months, from the District Forester to the remotest ranger, is the perfecting and tightening-up of the fire protective organization. Immediately after the close of the danger season last fall the supervisors, under the general direction of the district officers, began working up concrete detailed fire-protection plans for their forests. These working plans go considerably farther into the subject than has been done hitherto. A detailed study is made of all the factors which make up the fire danger on each ranger district, the ranger assisting in the study. When these are inventoried, preventive and protective measures are devised for each class of danger area. Thus for a logging slash or a government timber sale, fire lines may be indicated; for a popular camping-ground, patrol on the main routes of travel and cleaned-up camp-grounds; for a remote, uninhabited region subject to lightning fires, a lookout connected by telephone and caches of tools and supplies, and so on.

While these plans are more or less ideal and work out the organization of the protective force farther than it is possible to go at present, they furnish just the guide that is needed to insure the most effective use of the men and money available for protection work. The money allotments to the national forests have been apportioned with the fire risk of each in view, and it is thought that this study has resulted in meeting much more closely the relative needs of the forests in the State.

The short-term patrol men are now on their stations. Between May 1st and June 1st the national forest forces have been augmented by the assignment of fifty-six additional forest guards, as the total field force now on duty in the district is 459 men.

During the winter some of the older rangers tried their hands at designing a fire-fighting tool that could be easily carried on patrol. An effective tool must combine a shovel, a hoe and an ax; so the task is no easy one. One model of a take-down tool of this description was submitted and a sample made. This will be tried out in the field and if it works well, it may be adopted as the regulation equipment of Uncle Sam's fire patrolman.

The rangers themselves have a very keen sense of their responsibilities in the matter of fire protection. At various ranger meetings during the winter a modification of the army's "war game" was played. A large-scale map being hung in front of the assembled rangers, a pin is stuck in it at random to represent a fire and a movable arrow on the map shifted to show the wind direction. Then the ranger in whose district the fire has broken out is called upon to answer on the dot a string of rapid-fire questions as to how he will proceed to control the fire. The number and pertinency of questions that a force of experienced rangers can ask and the coolness and accuracy with which they are answered are alike remarkable. It sometimes happens, as at a real fire, that a new man will lose his head and become completely "gallied."

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*Information furnished by the U. S. Forest Service, District 5.

Wide publicity has been given to a set of rules for care with fires in the woods, an interesting feature of which is a picture postal recently issued by the district office containing a picture of a disastrous fire.

Fire Warning.

The "dry season" is here and the Sierra Club urges its members to co-operate with the Federal and State forest officials with the object of preventing forest fires this summer. This Club has always taken an advanced stand on all matters pertaining to forestry, and the *prevention of fires* is one of the most important ways in which our members can assist. The following are good suggestions to bear in mind and get others to observe:

1. Never throw away a burnt match, cigar or cigarette stub until you are sure it is out.

2. Build small campfires. Rake away the leaves and litter from around them. Don't build campfires against standing trees or down logs.

3. Don't build bonfires. The wind may come up at any minute and carry the fire beyond your control. You can tell a good woodsman by the size of his fire.

4. Don't leave a campfire, even for a short time, without putting it *out* with water or dirt.

5. Notify the nearest U. S. Forest Ranger or State Fire Warden of every forest fire you see or hear of.

Board of Directors of Sierra Club.

San Francisco, Cal., June 1, 1911.

BOOK REVIEWS.

EDITED BY MARION RANDALL PARSONS.

"YOSEMITE TRAILS." A book sure to capture the interest of Sierra Club members is "Yosemite Trails,"* by J. Smeaton Chase. Those of us who have traveled these trails will take delight in renewing our memories of the "dim alleys of forest and aching white rock-highways; ghostly snow-glimmer by starlight; peaks in solemn rank against the sky"; while to those of us to whom the great park is still unknown ground, no better introduction could be offered. Interesting as the earlier portions of the book are, the chapters on the Yosemite cannot compare with those devoted to the High Sierra. Once Mr. Chase has set his feet upon the higher trails his narrative swings into a brisker pace and evinces a keener delight in the many joys that go to make up a Sierra day. As must almost inevitably be the case where the author's acquaintance with the country is of so brief a character, a few inaccuracies have crept in, such as in attributing the destruction of the tamarack pines along the Tuolumne watershed to forest fires; but these are mostly of minor importance and by no means to be weighed against the book's real worth. As a guide book, however, it hardly fulfills the author's ambition, for his amusing account of his wanderings among unknown and unidentified cañons could give little light to a puzzled wayfarer in that least known portion of the Yosemite Park, the northeastern. The rest of Mr. Chase's journeyings took him over the main-traveled trails of the region. Wawona and Hetch Hetchy, the Pohona Trail, Lake Tenaya and Bloody Cañon, even Donohoe Pass, all are familiar ground to many more hundreds of people than probably Mr. Chase imagines. The great value of his book lies in the charm of its descriptive passages, the keen appreciation of all that is beautiful and uplifting in our mountain world, and, greatest of all, the interest it is bound to awaken among its readers in "this great Californian range, . . . with its superb features of mountain, forest, river, glacier, lake and meadow, and lying under a climate of unequaled regularity and perfection," which in the time to come, the author believes, "will be the playground of America." M. R. P.

Yosemite Trails. By J. SMEATON CHASE. Houghton, Mifflin Company, Boston and New York, 1911. 354 pages, with illustrations from photographs, and a map. Price, $2.00 net.

"THE CABIN." The announcement of a new book by Stewart Edward White is always greeted with pleasure by his many readers. One is sure to find within its covers much entertainment of a light, genial character. His latest book, "The Cabin,"* is a collection of minor incidents of camp and trail, character sketches of the mountain folk, ranger life, dog and mule stories. In a concluding "Note" Mr. White adds a good word to the suggestion that has several times been advanced of preserving small forests of our finest conifers (other than sequoias) as national parks or monuments. "It is true," Mr. White says, "we have set aside for the public vast tracts of woodland, but the national forests are for use and not for integral preservation. They are intended to be lumbered off, just as private holdings are meant to be lumbered. . . . The forest itself will be preserved, both as a watershed and as a growing and perpetual supply, but it must necessarily change its character. The big trees will all be gone; and never more will they be seen again. . . . The only hope is in setting aside national parks for their preservation, as we have . . . for other things, such as geysers, battlefields, cañons, sequoias. In some of these reservations . . . necessarily grow many specimens of the various pines and firs. But they are only specimens. To preserve intact the dignity and majesty peculiar to these forests it would be necessary to set aside especial sugar-pine parks from districts where such species particularly flourish; and this has nowhere been done. If somewhere along the sugar-pine belt some wisdom of legislation or executive decree could duplicate the Muir Woods on a greater scale, or the Sequoia National Park on a lesser, we would avoid the æsthetic mistake we made in tossing to memory alone the visions of our old primeval forests of the East." M. R. P.

"ADVENTURES OF JAMES C. ADAMS." Wandering through a dark little curio shop in Honolulu last year, the reviewer came upon a copy of a rare California book, a first edition of Mr. Hittell's "The Adventures of James Capen Adams; Mountaineer and Grizzly Bear Hunter of California,"† published by Towne & Bacon, San Francisco, in 1860. At that time, 1910, it was only by a similar stroke of good fortune that one could gain possession of this quaintly titled book at all; but now comes a new edition, embodying an introduction and a postscript that

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***The Cabin.* By STEWART EDWARD WHITE. Doubleday, Page & Company, New York, 1911. 283 pages, illustrated with photographs by the author. Price, $1.50.

†*The Adventures of James Capen Adams: Mountaineer and Grizzly Bear Hunter of California.* By THEODORE H. HITTELL, Chas. Scribner's Sons, New York, 1911. 373 pages, illustrated. New edition. Price, $1.50.

were lacking in the original form, but in all other respects, even as to type, binding and illustrations, a duplicate of the old. In spite of the often revolting descriptions of wholesale carnage among the wild animals so abundant in our mountains in early times, Mr. Hittell has succeeded in giving us in Adams a picture of a simple, sincere, lovable character, whose thirst for battle could not always prevent his feeling moved at the spectacle of a mother bear or panther playing with her young. His emotion at this "interesting and beautiful sight," however, never appeared to be strong enough to lead him to spare the happy family, for his observations and cheerful moralizings inevitably ended in the killing of the mother and the capture, slaughter, or maiming of her young. The most interesting portions of the book are the accounts of the taming and training of the grizzly bears, Lady Washington and Ben Franklin, who became so devoted to the hunter that they followed him like dogs, fought other bears for him, slept with him, and even condescended to carry packs on their shoulders. Mr. Hittell vouches for the truth of these statements, having seen Adams many times with his bears in San Francisco in 1856. Adams's wanderings extended from Washington to the Kern River, from the Sierra Nevada to the Rockies. As he almost invariably was accompanied by a camp wagon, as well as by his mules and bears, the traversing of this great area of trackless wilderness and snowy mountain chains might alone be considered worthy of a volume; but Adams evidently regards it as being all in the day's work. He was a dealer in furs as well as a trapper, hunter, and trainer of bears. The description of his caravan on a journey from Eastern Washington to Portland is both interesting and amusing. "There were difficulties in putting the caravan in motion; for of all heterogeneous compositions, it was one of the most curious. . . . There were five horses packed with buffalo robes; next four horses packed with bear skins; then two packed with deer skins; two with antelope skins; seven with dried meat for the use of the animals on the journey; one with boxes containing the young bear cubs last caught; two with boxes containing wolves, untamed; a mule with foxes and fishers in baskets; and a mule with tools, blankets, and camp luggage. . . . But the most remarkable portion of the train consisted of the animals which he drove along in a small herd; these were six bears, four wolves, four deer, four antelopes, two elks and the Indian dog." Altogether a most fascinating book and one that should be especially popular among Californians.

M. R. P.

"THE MOUNTAIN TRAIL AND ITS MESSAGE."* This is the title of a little book by the Reverend Albert W. Palmer. Its contents are of such excellent quality that one cannot help wishing there were more pages in it. The colored half-tone illustration of Gilmore Lake forms the frontispiece, and there are many others affording beautiful glimpses of Hetch Hetchy, the Tuolumne Cañon, Rogers Lake, and the Tuolumne Meadows. Mr. Palmer has depicted in a very happy manner the free and healthful life of the Sierra Nevada as it is lived by members of the Sierra Club on their annual outings into the High Sierra. Various types of interesting recreation seekers pass before the reader amid a setting of cliffs and forests, lakes and waterfalls, such as only the California mountains can provide. The reader finds himself among them around the campfire, where scientists tell the fascinating secrets of nature in simple and direct language, where music and song are free from the artifices of the theater, and where the day's fatigue is slept away on the blooming heath with no ceiling to shut out the stars. John Muir also appears in these pages as only those know him who have walked with him in the mountains. Yet amid this recital of adventures and depiction of scenes, Mr. Palmer, with gentle but sure touch, always turns to the light the moral aspect of his experiences. W. F. B.

"WILD LIFE IN THE ROCKIES."* This title is well selected, both as regards the birds, beasts and trees discussed, and also as regards the writer's own adventures. As "State Snow Observer" of Colorado, his winter travels are records of what appear to the ordinary mountaineer to be extreme discomforts and real dangers. His indifference to the former and disregard of the latter are quite consistent with the supreme delight he feels in the beauty of the wild surroundings.

To stay out night after night in the dead of winter without blankets and without food other than raisins is certainly a supreme test of a man's love for Nature in her wildest moods. That the writer is amply repaid for such hardships is abundantly evident in his every word. Instance his intimate matter-of-fact recital of battles with storm and snow; also his loving chronicle of "The Story of a Thousand-Year Pine," and again the adventures of "Faithful Scotch."

There is a quality of lovableness as well as of poetic beauty in

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**The Mountain Trail and Its Message.* By ALBERT W. PALMER. Pilgrim Press, Boston, 1911. The book is attractively bound in corduroy paper boards. 50 cents net. 31 pages.

**Wild Life in the Rockies.* By ENOS A. MILLS. Houghton-Mifflin Co., Riverside Press, Boston and New York, 1909. 257 pages; with illustrations from photographs. Price $1.75 net.

his style which is shown in manifold happy turns of expression: "That all pervading presence called silence has its happy home within the forest. . . . Silence is almost as kind to mortals as is her sweet sister sleep." This charming volume is fitly dedicated to John Muir.

H. M. LeC.

"TRAILS OF THE PATHFINDERS."* There are books which appeal to the perpetual boyhood of the race; books which will be read as eagerly by graybeards as by those of the unrazored lip; books full of the eagerness for novelty and conquest, full of the adventures of men who know no obstacles and feel no fear. Such a book is Mr. Grinnell's "Trails of the Pathfinders." The author's preface tells us: "The chapters in this book appeared first as part of a series of articles under the same title contributed to *Forest and Stream* several years ago. . . .

"The books from which these accounts have been drawn are good reading for all Americans. They are at once history and adventure. They deal with a time when half the continent was unknown; when the West—distant and full of romance—held for the young, the brave and the hardy possibilities that were limitless.

"The legend of the kingdom of El Dorado did not pass with the passing of the Spaniards. All through the eighteenth and part of the nineteenth century it was recalled in another sense by the fur trader, and with the discovery of gold in California it was heard again by a great multitude—and almost with its old meaning.

"Besides these old books on the West, there are many others which every man should read. They treat of that same romantic period, and describe the adventures of explorers, Indian fighters, fur hunters, and fur traders. They are a part of the history of the continent."

Carlyle tells us that a poet moves us by virtue of the fact that he is so much more a man than we. The frontiersman moves us by virtue of the same fact. Where Mr. Grinnell has let his heroes speak to us directly—has quoted from the journals of the original published accounts of exploration,—the incisive strength, the delight in finesse, the irresistible patience and dauntlessness compel our admiration. Alexander Henry, Jonathan Carver, Alexander Mackenzie, Lewis and Clarke, Pike, Fremont, and the others walk through the pages, heroic in stature, though entirely alive and human. Dr. Coues comments upon the diary of Alexander

---

**Trails of the Pathfinders.* By GEORGE BIRD GRINNELL. Charles Scribner's Sons, New York, 1911. Illustrated with map and views of frontier adventure. 460 pages. Price, $1.50 net.

Henry the younger: "It mirrors life in a way Mr. Samuel Pepys might envy could he compare his inimitable diary with this curious companion-piece of *causerie,* and perceive that he who goes over the sea may change his sky but not his mind."

The quotations from original documents, though numerous, are not too numerous, and add a quaint reality to the chronicle of a hundred years ago. Where Mr. Grinnell tells the story himself he proceeds in the downright way demanded by his subject and is thereby the more convincing. Indeed, Mr. Grinnell can hardly be thought of as telling the story; one has the feeling that it is a story that tells itself. As one turns the pages of adventure,—escapes from the Indians, from wolves, from starvation; as one reads of the way in which tact and decision and sometimes a ruthless promptitude made their way across the continent, one has a feeling that the young boys at least should read the book—if only to learn their heritage of power and the cost of empire.

J. C.

"MY FIRST SUMMER IN THE SIERRA."* Every lover of the mountains and of out-door life will welcome this latest word from John Muir's pen. It bears a message of special interest to members of our Club, written as it is by our own much-beloved President, and about a region the preservation of which was the cause of the Club's foundation. The book has that inimitable literary charm which long since placed Mr. Muir among the foremost of American writers. It has been dedicated "To the Sierra Club, Faithful Defenders of the People's Playgrounds." This book was received too late for the careful and extensive review it merits. This will appear in the next issue of the BULLETIN.

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*My First Summer in the Sierra. By JOHN MUIR. Houghton, Mifflin Co., Boston and New York. 354 pages; illustrated. Price, $2.50.

TO THE MEMBERS OF THE SIERRA CLUB AND THEIR FRIENDS.

Our Club is generally recognized as the one organization best fitted to take the lead in all matters involving the preservation of the wonderful natural scenery which California is so fortunate as to possess, and in calling the attention of the world to these wonders. It takes money to carry on this work and to direct and concentrate public opinion where it will do the greatest immediate good. Members mean money—for our work is financed almost entirely through the payment of dues. The Club has grown wonderfully in the years past, but there is room for much greater growth and need for an increased income. We want each member of the Club to take an active part in its various undertakings. You can help by getting new members. There are few public-spirited people in California who would not willingly contribute $3.00 annually ($5.00 for the first year) to help in this good work. Any of your friends who are interested to help in the following activities should be persuaded to join.

PRESERVATION OF THE SCENERY AND WONDERFUL NATURAL FEATURES OF THE SIERRA.—Concerted action is essential and a central organization to enlist and direct public sentiment is an imperative necessity.

PUBLICATION OF INFORMATION TELLING PEOPLE ALL OVER THE WORLD ABOUT THESE WONDERS AND HOW TO REACH THEM, thus arousing interest in their welfare.

PRESERVATION OF OUR FORESTS.—The Club has always taken a vital interest in the preservation of our forests. In our BULLETIN, published semi-annually, we make a special feature of Forestry and publish reliable and up-to-date facts furnished by leading authorities so as to keep our members in touch with this important subject.

WELFARE OF OUR NATIONAL PARKS.—We are devoting every energy to further the interests of our great national wonderlands, both by securing increased appropriations from Congress and by keeping our members informed of any dangers which threaten their welfare and existence.

BUILDING OF TRAILS AND ROADS to make these parklands more accessible.—The Paradise Trail, connecting Paradise Valley with Kings River Cañon, would not have been built but for the leadership and co-operation of the SIERRA CLUB. Its value to travel is worth infinitely more than its cost. Other trails are needed to out-of-the-way but attractive regions of the High Sierra.

PLANTING THE FISHLESS STREAMS AND LAKES OF THE SIERRA WITH TROUT. — The SIERRA CLUB, in co-operation with the California Fish and Game Commission, has done more in the last four years towards stocking the Kings-Kern High Sierra with golden trout and other trout than has been accomplished in the forty years preceding.

ANNUAL OUTINGS AND EXCURSIONS.—This part of the Club's work can be participated in by but comparatively few. While a subordinate part of the Club's activities, it enables us to furnish our members with a wonderful outing at minimum expense and results in the exploration and the increased accessibility of the regions visited through construction of trails and bridges and spread of information for the benefit of those who may come after.

PHOTOGRAPHS ARE EXHIBITED AND LECTURES DELIVERED. We intend to make these features more important as time goes on.

We ask you to aid us in building up the membership of the Club and thus making it a greater power for good.

BOARD OF DIRECTORS,

PER WM. E. COLBY, *Secretary.*

PUBLICATIONS OF THE SIERRA CLUB

No. 1.—Articles of Association, By-Laws, and List of Members.

Nos. 4 and 5.—Maps of Portions of the Sierra Nevada adjacent to the Yosemite and to Kings River, 1893.

No. 8.—Table of Elevations within the Pacific Coast, 1895, by Mark B. Kerr and R. H. Chapman.

No. 12.—Map of the Sierra Region, May, 1896.

Nos. 2, 3, 6, 7, 9, 10, 11, 13, together forming Volume I., Nos. 1-8, of the SIERRA CLUB BULLETIN.

Contents of Volume I.—Ascent of Mt. Le Conte; Address on Sierra Forest Reservation; California Outing; Crater Lake, Oregon; Diamond Hitch; Explorations North of Tuolumne River; Forest Reservations; From Fresno to Mt. Whitney, via Roaring River; From Gentry's to El Capitan and Yosemite Falls; Grand Cañon of the Tuolumne; Head-Waters of Kings River; Kern and Kings River Divide; Kings River and Mt. Whitney Trails; Knapsack Tours in the Sierra; Mt. Bernard; Mt. Tahoma; Mt. Whitney Trail; New Grove of Sequoia Gigantea; Notes on the Pine Ridge Trail; Route up Mt. Williamson; Search for a Route from the Yosemite to the Kings River Cañon; Sources of the San Joaquin; Three Days with Mt. King; Through Death Valley; Through the Tuolumne Cañon; Tramp to Mt. Lyell; Upper Sacramento in October; Notes, Correspondence, and Reports.

Nos. 14, 15, 16, 17, 18, and 19, together forming Volume II., Nos. 1-6, of the SIERRA CLUB BULLETIN.

Contents of Volume II.—Ascent of the White Mountains of New Mexico; Basin of the South Fork of the San Joaquin River; Conifers of the Pacific Slope, Parts I and II; Day with Mt. Tacoma; Early Summer Excursion to the Tuolumne Cañon and Mt. Lyell; Expedition of Prince Luigi Amedeo of Savoy to Mt. St. Elias; Explorations of the East Creek Amphitheater, from Mt. Rose to Mt. Shasta and Lower Buttes; Kaweah Group; Lava Region of Northern California; Mountain Trips: What to Take and How to Take It; Neglected Region of the Sierra; Observations on the Denudation of Vegetation—Suggested Remedy for California; On Mt. Lefroy August 3, 1896; On Mt. Lefroy August 3, 1897; Philip Stanley Abbot; Taking of Mt. Balfour; To Tehipite Valley from the Kings River Grand Cañon; Up and Down Bubbs Creek; Wanderings in the High Sierra Between Mt. King and Mt. Williamson,—Parts I and II; Woman's Trip Through the Tuolumne Cañon; Yosemite Discovery; Notes, Correspondence, and Reports.

No. 20.—Volume III., No. 1, pp. 1 to 118—Ramblings Through the High Sierra (Reprinted from "A Journal of Ramblings," privately printed in 1875); Editorial Notice; Ouzel Basin; Forestry Notes.

No. 21.—Ramblings Through the High Sierra. Same as No. 20. (Specially bound; without Editorial Notes, etc.)

No. 22.—Volume III., No. 2, pp. 119 to 188.—Lake Tahoe in Winter; Ascent of "El Yunque"; Another Paradise; Kings River Cañon Trail Notes; Ascent of "Matterhorn Peak"; Reports; Notes and Correspondence; Forestry Notes.

No. 23.—Volume III., No. 3, pp. 189 to 270.—Parks and Peaks in Colorado; The Work of the Division of Forestry in the Redwoods; The Mazamas on Mt. Jefferson; Wagon-Trips to the Sierra; The Big Basin; The Re-Afforesting of the Sierra Nevada; The Descent of Tenaya Cañon; An Ascent of Cathedral Peak; A Glimpse of the Winter Sierra; Notes and Correspondence; Forestry Notes.

No. 24.—Volume III., No. 4, pp. 271 to 339.—The Mazamas on Mt. Rainier; Lassen Buttes; From Prattville to Fall River Mills; Zonal Distribution of Trees and Shrubs in the Southern Sierra; Mt. Washington in Winter; Round About Mt. Dana; Notes and Correspondence; Forestry Notes; Reports.

No. 25.—Volume IV., No. 1, pp. 1 to 75.—Joseph Le Conte in the Sierra; El Capitan; Camp Muir in Tuolumne Meadows; The Sierra Club Outing to Tuolumne Meadows; In Tuolumne and Cathedral Cañons; The Great Spruce Forest and the Hermit Thrush; From Redding to the Snow-clad Peaks of Trinity County; Trees and Shrubs in Trinity County; Notes and Correspondence; Forestry Notes; Reports.

No. 26.—Vol. IV., No. 2, pp. 77 to 176.—Into the Heart of Cataract Cañon; My Trip to Kings River Cañon (Reprint); Conifers of the Pacific Slope, Part III; Birds of the High Mountains; Notes and Correspondence; Forestry Notes; Reports.

No. 27.—A Flora of the South Fork of Kings River from Millwood to the Head-Waters of Bubbs Creek.

No. 28.—Vol. IV., No. 3, pp. 177 to 252.—Among the Sources of the South Fork of Kings River, Part I; With the Sierra Club in Kings River Cañon; Red-and-White Peak and the Head-Waters of Fish Creek; Mt. Whitney, Whitney Creek, and the Poison Meadow Trail; A New-Year Outing in the Sierra; The Ascent of Volcano Mayon; Notes and Correspondence; Forestry Notes; Reports.

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No. 29.—Vol. IV., No. 4, pp. 253 to 323.—Among the Sources of the South Fork of Kings River, Part II; the Coast Sierra from California to Panama; Ralph Sidney Smith (In Memoriam); Climbing Mt. Brewer; Table of Elevations of Peaks in the Sierra Nevada Mountains over 12,000 feet; Kings River Outing, 1902—Botanical Notes, etc.; Near the Kern's Grand Cañon; Reports; Notes and Correspondence; Forestry Notes.

No. 30.—Vol. V., No. 1, pp. 1 to 85.—The Ascent of the North Palisades; Variations of Sierra Glaciers; How Private Burns Climbed Mt. Pinatúbo; The Hillside Farmer and the Forest; The Notable Mountaineering of the Sierra Club in 1903; On the Trail with the Sierra Club; The Completed Le Conte Memorial Lodge; Reports; Notes and Correspondence; Forestry Notes.

No. 31.—Vol. V., No. 2, pp. 87 to 152.—Mt. Whitney as a Site for a Meteorological Observatory; The Water-Ouzel at Home; The San Francisco Peaks in April; Over Harrisons Pass with Animals; The Ascent of San Antonio; Secretary's Report; Treasurer's Report; Notes and Correspondence; Forestry Notes.

No. 32.—Vol. V., No. 3, pp. 153 to 270.—First Ascent: Mt. Humphreys; Address at Memorial Exercises; Mt. Lyell and Mt. Ritter Ascents by Sierra Club Outing of 1904; A Deer's Bill of Fare; Domes and Dome Structure of the High Sierra; Some Aspects of a Sierra Club Outing; The Evolution Groups of Peaks; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 33.—Vol. V., No. 4, pp. 271 to 328.—The Grade Profile in Alpine Glacial Erosion; Systematic Asymmetry of Crest-Lines in the High Sierra of California; The Tuolumne Cañon; Inscription for the Le Conte Memorial; Over Harrisons Pass from the North with a Pack-Train; California Forestry Law; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 34.—Vol. VI., No. 1, pp. 1 to 74.—The Sierra Club's Ascent of Mt. Rainier; Mt. Rainier, Mt. Shasta, and Mt. Whitney as Sites for Meteorological Observatories; The Sky-Line of the Tatoosh Range, Mt. Rainier National Park; The Effect of the Partial Suppression of Annual Forest Fires in the Sierra Nevada Mountains; In Memoriam; Joseph Le Conte; Wild Animals of Mt. Rainier National Park; The Sierran Puffball; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

All of above are out of print, having been destroyed in the fire of April 18, 1906.

No. 35.—Vol. VI., No. 2, pp. 75 to 152.—An Ascent of the Matterhorn; The Name "Mt. Rainier"; The Second Kings River Outing; The Motion of the Nisqually Glacier, Mt. Rainier; Report on the Kings River Cañon and Vicinity; Reports; Notes and Correspondence; Book Reviews; Forestry Notes; Revised By-Laws of the Sierra Club.

No. 36.—Vol. VI., No. 3, pp. 153 to 210.—The Aftermath of a Club Outing; Along the Foothills to Lake Chabot; Mt. Rose Weather Observatory; The Ascent of Asama-Yama; Reports; Secretary's Report; Treasurer's Report; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 37.—Vol. VI., No. 4, pp. 211 to 284.—The Hetch Hetchy Valley; To Joseph Le Conte, a Poem; Lake Ramparts; The Grand Cañons of the Tuolumne and the Merced; The Water-Ouzel, a Poem; Photograph of the Water-Ouzel; Bird Life of Yosemite Park; An Easterner's Impressions of a Sierra Club Outing; Indian Pictographs in Pate Valley; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 38.—Vol. VI., No. 5, pp. 285 to 336.—William Kent's Gift; Redwoods; The Mt. Ritter Knapsack Trip; A Knapsack Trip to Mt. Ritter; The Yosemite Waters; Snowfall in the Sierra Nevada; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 39.—Vol. VII., No. 1, pp. 1 to 84.—The High Mountain Route Between Yosemite and the Kings River Cañon; With the Sierra Club in the Kern Cañon; Down the Kern-Kaweah; An August Outing in the Upper Merced Cañon; Organization of Sierra Club; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 40.—Vol. VII., No. 2, pp. 85 to 140.—Camping Above the Yosemite—A Summer Outing With the Sierra Club; From Kern Cañon to Giant Forest—The Chronicle of a Knapsack Trip; Up From "The Land of Little Rain" to the Land of Snow, Being the Journal of a Sledging Trip Up Mt. Whitney in Winter; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 41.—Vol. VII., No. 3, pp. 141 to 214.—The Observatory on Mt. Whitney; The Grand Circuit of the Yosemite National Park—Down Tenaya Cañon; On Mt. St. Helens With the Mazamas; A High Sierra Circuit on Headwaters of Kings River; Organization of the Sierra Club; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 42.—Vol. VII., No. 4, pp. 215 to 274.—Galen Clark; The Grand Cañon of the Tuolumne; Little Studies in the Yosemite Valley; The New Glacier National Park; The Ascent of Fujiyama; The Proposed Estes National Park; Winter in the High Sierra; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 43.—Vol. VIII., No. 1, pp. 1 to 86.—Cathedral Peak and the Tuolumne Meadows; Little Studies in Yosemite Valley; The Kings River Outing of 1910; A Vacation Trip to Mount Kinabalu in British North Borneo; Ascent of Red Peak; The Discovery of the Nest and Eggs of the Gray-Crowned Leucosticte; The Passing of Our Mountain Meadows; Fire and the Forest—The Theory of "Light Burning"; Organization of the Sierra Club; Reports; Notes and Correspondence; National Parks; Trout Planting; Forestry Notes; Book Reviews.

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PUBLICATIONS OF THE SIERRA CLUB

No. 45

SIERRA CLUB BULLETIN

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SIERRA CLUB BULLETIN

FOUNDED 1892

Edited for the Club by
WILLIAM FREDERIC BADÈ.

JANUARY, 1912

Vol. VIII. No. 3

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All communications intended for publication by the SIERRA CLUB, and all correspondence concerning such publication, should be addressed to the Editor, WM. F. BADÈ, Room 402 Mills Building, San Francisco, California.

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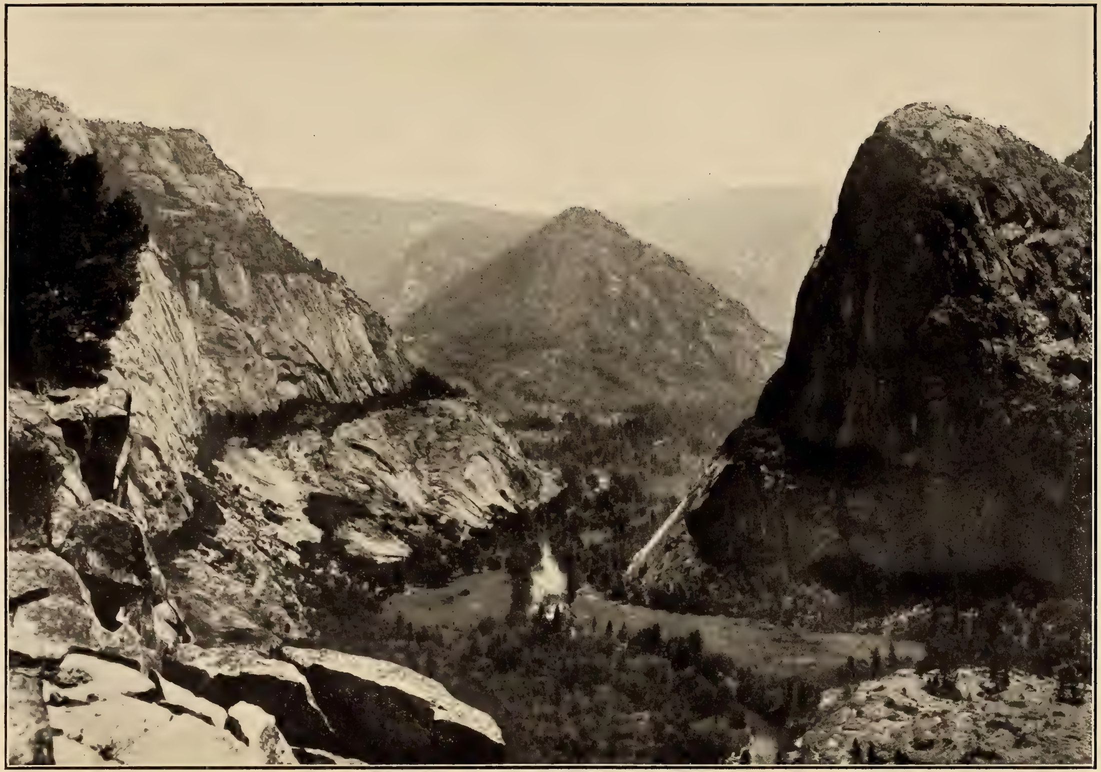


LOOKING UP THE HETCH HETCHY VALLEY FROM THE SOUTH SIDE NEAR THE LAKE ELEANOR TRAIL.
Photograph by Herbert W. Gleason.

THE LOWER END OF TUOLUMNE MEADOWS, FAIRVIEW DOME AND MT. HOFFMAN SHOWING ON THE SKYLINE.

Photograph by Herbert W. Gleason.

SIERRA CLUB BULLETIN

VOL. VIII SAN FRANCISCO, JANUARY, 1912 No. 3

WITH THE SIERRA CLUB IN 1911.

BY ROBERT M. PRICE.

Lured by the call of the wild, our company of about one hundred, the main body of the Sierra Club Outing party, assembled at the Oakland Mole late in the evening of July 7th. We had come from all parts of the country —from Boston and San Francisco, from Seattle and San Diego, and from across the Atlantic,—and we were of various vocations—clergymen searching for "tongues in trees, books in the running brooks, sermons in stones, and good in everything"; physicians seeking rest from their tiresome visits; lawyers and judges escaping from the wearying adjustment of the doubtful balance of rights and wrongs; professors and teachers worn by the year's work; students scarcely beyond the ominous shadows of examinations; real-estate brokers forgetful of property values, and men and women of no particular aim or calling—a diversified party, all lured by the trail and seeking to worship the divinity of the crags as each heard the call of the "Red Gods"—

> "He must go—go—go away from here!
> On the other side the world he's overdue,
> Send your road is clear before you
> When the old spring fret comes o'er you
> And the Red Gods call for you!"

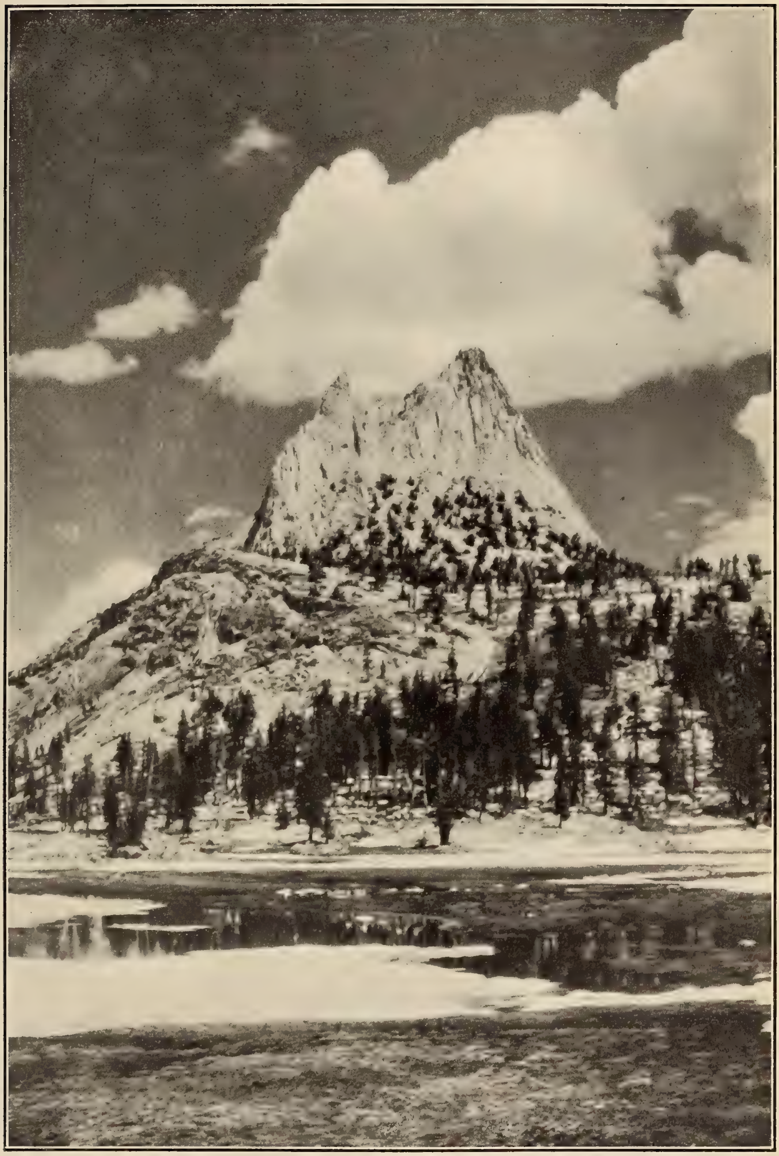
When we awakened the following morning we were beyond the sun-baked plains of the San Joaquin and well up the Merced Cañon, where straggling, ghost-like nut pines faintly suggested the forest belt which we were approaching. After breakfasting at El Portal, and riding for a few hours along the foaming Merced, we reached the Sierra Club camp in Yosemite Valley, and found the advance party already relishing the culinary art of inimitable Charley Tuck. The next day the Los Angeles party arrived and early the following morning we climbed to Little Yosemite, up the trail where Nevada Falls

"—flings her white storm-flood
far forth on the air."

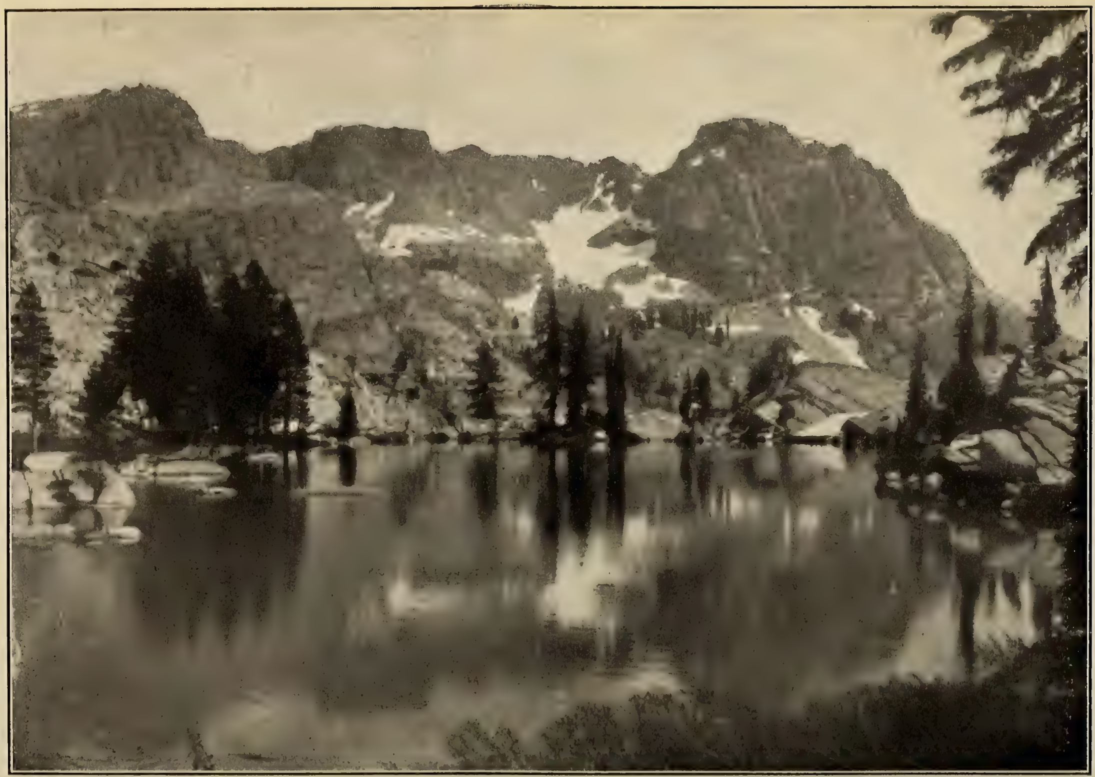
In passing that fall many were attracted by the wonderful beauty of a rainbow spanning the spray. The colors were unusually bright and sharply defined, and seen through the dark foliage of the firs, the flame of the orange and red suggested a brilliant camp-fire glowing in the forest at night.

From Little Yosemite, for part of the distance to Merced Lake, the way led over a new trail, by use of which some elevation and considerable distance were saved. This new route was practically the same as that taken in 1897 by a small party of which the writer was a member. There was then no trail to Merced Lake, and the ease with which the lake was reached by the large Sierra Club party and its long pack-train was in striking contrast to the laborious efforts fourteen years before in forcing the pack animals over lateral moraines and down steep cañon sides to the river. A short distance below Lake Merced were observed several tamarack poles that the earlier party had used in constructing a trail over a glaciated surface which projected into the river at an angle too steep for passage by the pack animals. Since then this place has been made safe by a well-constructed trail, the river side of which is supported by iron pins drilled into the rock.

At Merced Lake, known to Mr. Muir as Shadow Lake and most interestingly described in his "Mountains of California," a fixed camp was made for two days. This afforded an opportunity to visit Lake Washburn and to test the coolness of nerves on the narrow ledge just below the lake and on Colby's fish-pole bridge over the gorge at Soda Springs. From the camp at the lake, three or four of the party made the long and rather difficult ascent of Mt. Clark.



CATHEDRAL PEAK, YOSEMITE NATIONAL PARK.
Photograph by C. C. Clarke.



A PORTION OF ROGERS LAKE, YOSEMITE NATIONAL PARK.
Photograph by Herbert W. Gleason.

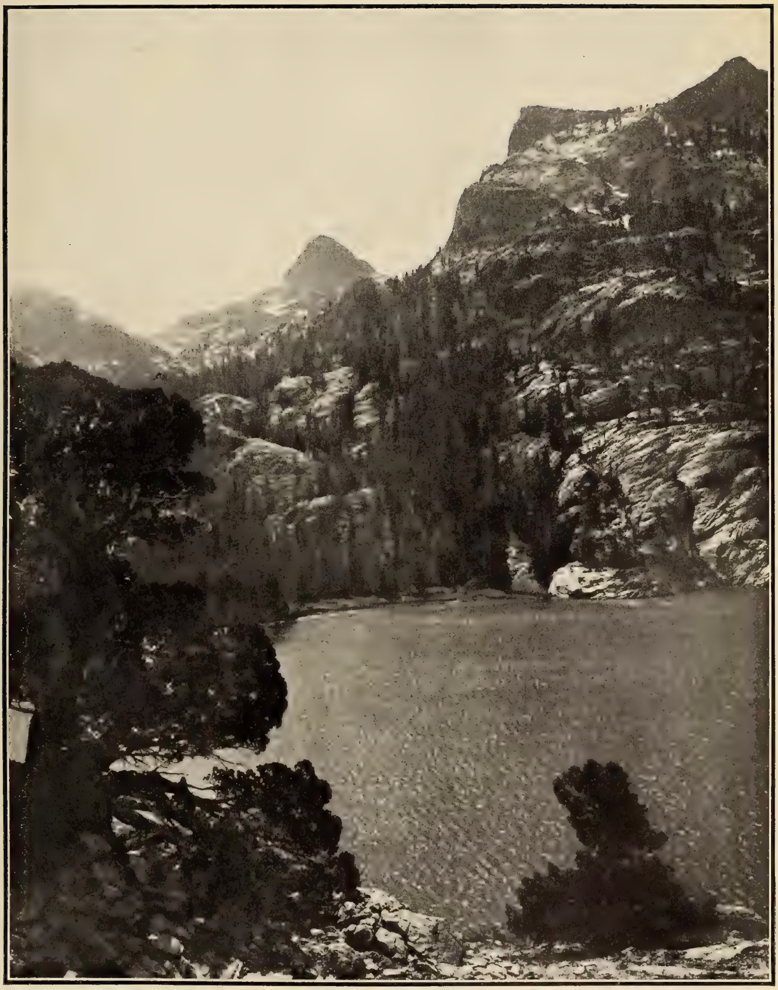
While the main party crossed the divide into the Tuolumne basin and made camp in the Tuolumne Meadows, a party of five knapsacked to Mt. Ritter by way of Lake Washburn, the amphitheater at the head of Merced Cañon, Foerster Peak and Bench Cañon, and successfully made the ascent, but an approaching thunder-storm drove them down before they had had full opportunity to enjoy the magnificent view from the "King of the Middle Sierra." The crossing of the Merced's roaring torrent on a submerged log; the camp in the snow at Foerster Peak; the majestic view across the cañon of the San Joaquin of Ritter, and the Minarets in relief against the white snow-fields and glaciers; the snow bridges in Bench Cañon; the thunder- and hail-storm at the timber-line camp at the base of the peak; the ice-covered lakes; the exhilarating slide down the glacier; the gorgeous sunset and the white peaks gleaming in the moonlight seen from Rush Creek camp; the three days of weary trudging in the heavy snow and the uncomplaining good comradeship among the members of this small party,—were scenes and incidents of the trip never to be forgotten.

In the Tuolumne Meadows frequent and unprecedented thunder-storms occasioned some discomfort, especially to the large party that ascended Mt. Lyell, but the dreaded rain in an untented and unsheltered camp, like most of the threatened ills of life, proved more formidable in expectation than in reality, and with the break of dawn each day, the clouds in the sky and the drooping spirits in camp had invariably disappeared.

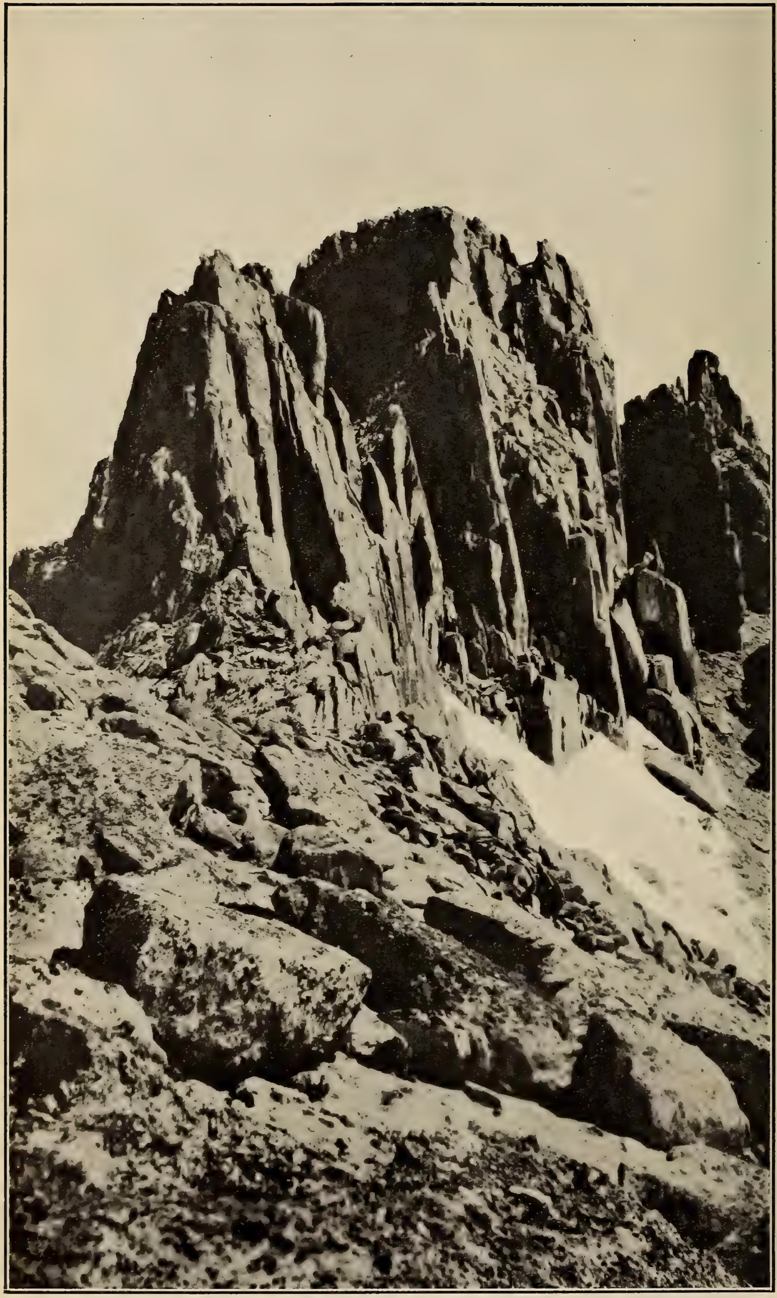
From the permanent camp at the foot of Lambert Dome many delightful and invigorating excursions were made—to Mt. Lyell and its glaciers, to Mt. Dana and Bloody Cañon with their superb views of Mono Lake, to Cathedral and Unicorn peaks, and to the innumerable lakes and meadows in the vicinity. Who would not like to repeat them all?

The next move brought the Sierrans to the mouth of Conness Creek in the Tuolumne Cañon, and a day's halt there enabled many of the party to descend as far as California and Le Conte Cascades and see the best of the cañon's water scenery. The magnificent power and sublime beauty of these cascades in their tumultuous rush down the cañon and their jeweled spray dashing high in air were indescribable, and all who made this trip regretted that these wonders of nature were not more easily accessible to pilgrims of the Sierra. While the main party went to Matterhorn Cañon and thence to Rodger's Lake, nine trampers knapsacked down the Tuolumne Cañon to Muir Gorge, climbed up the north wall along the southerly bank of the stream which joins the Tuolumne River just below the gorge, followed up Rodger's Creek to Neale Lake and joined the camp at Rodger's Lake the fourth day.

Matterhorn Cañon and Rodger's Lake will no doubt suggest to some members of the Club copious rain and damp beds, but on the part of the more æsthetic these discomforts have been forgotten, and to mention these places will recall the billowy masses of cumulus rising in the southeast and overspreading the sky, the murmur of thunder, first far distant, then approaching nearer and nearer, culminating in bright flashes and metallic crashes reverberating from peak to peak and filling the cañons with its volume of sublime sound; the downpour of rain and then the warm sun reappearing and brightening the refreshed vegetation and making glorious the disappearing clouds. Peculiarly fascinating and long to be remembered was the sound of the hail on the lake—a few patterings gradually increasing in volume to a roar like that of an on-rushing locomotive, and as gradually diminishing to silence. Of the many picturesque spots visited by the Club, that at Rodger's Lake is pre-eminent, lying as it does at an elevation of 9,500 feet, its clear blue waters beautifully reflecting its islands and the snowfields of the surrounding rugged peaks.



BENSON LAKE, YOSEMITE NATIONAL PARK.
Photograph by Herbert W. Gleason.



THE SUMMIT OF TOWER PEAK.
Photograph by Francis P. Farquhar.

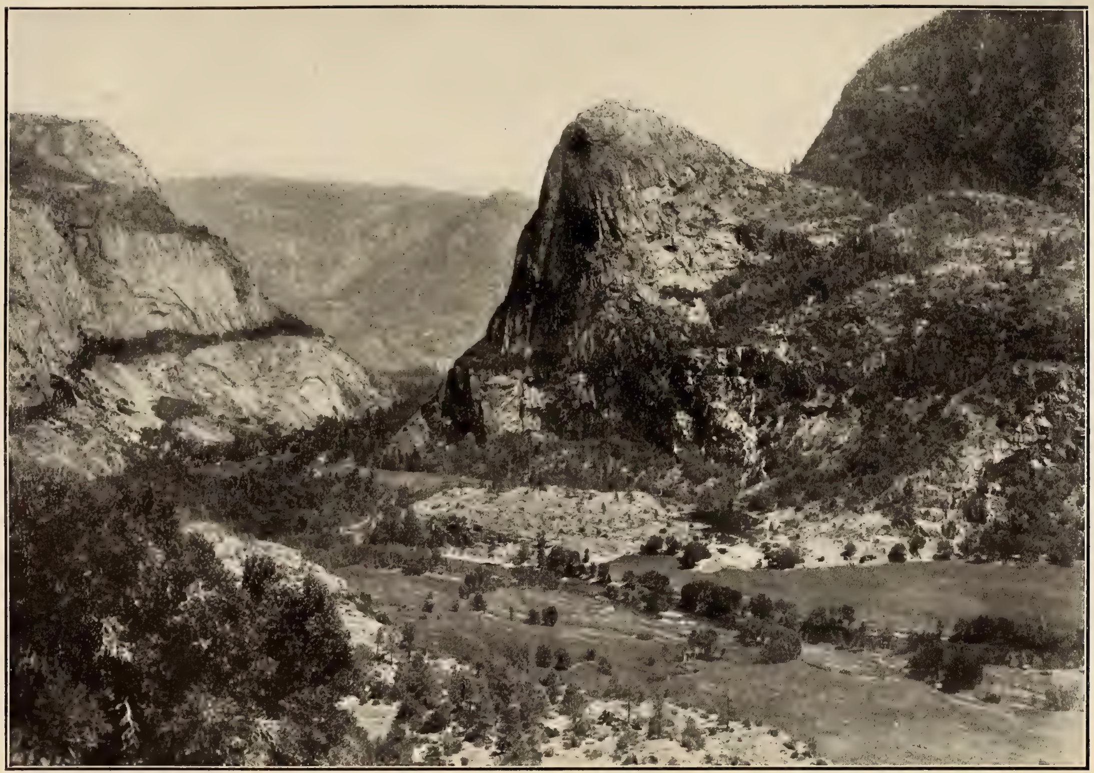
From Rodger's Lake to Benson Lake and across Kerrick and Stubblefield Cañons to Tilden Lake and thence to Rancheria Mountain was new country for most of the party and offered many opportunities for interesting explorations. With the exception of one day at Benson Lake and another at Tilden Lake, the party, after leaving Matterhorn Cañon, was on the trail every day, and, though baggage and provisions had been reduced to a minimum, the capability of the pack-train, which had to cover the trail twice each day, was taxed to the uttermost. It speaks well for the foresight of the leader of the party and for the ability of the manager of the pack-train, that during this time not a deviation was made from the traveling schedule, not a meal was more than a few minutes late, and not once was the arrival of the dunnage bags delayed enough to seriously inconvenience anyone.

Tilden Lake is a mountain gem seldom visited. It is a long, narrow reach of sapphire blue, wooded on its western shore with pines and hemlocks and guarded by Tower Peak several miles beyond its head. A number of the party easily made the ascent of this peak, returning to camp early in the afternoon, and while the climb was in no respect difficult or dangerous, for some inexplainable cause, whether from lack of formal leadership or from contempt of dangers bred by constant mountain-climbing, there were more accidents on this day than on all others of the trip combined. Unintentional slides on snow-fields and blows from falling rocks, which might have been fatal, resulted, providentially, only in cuts, bruises, abrasions and nervous shocks.

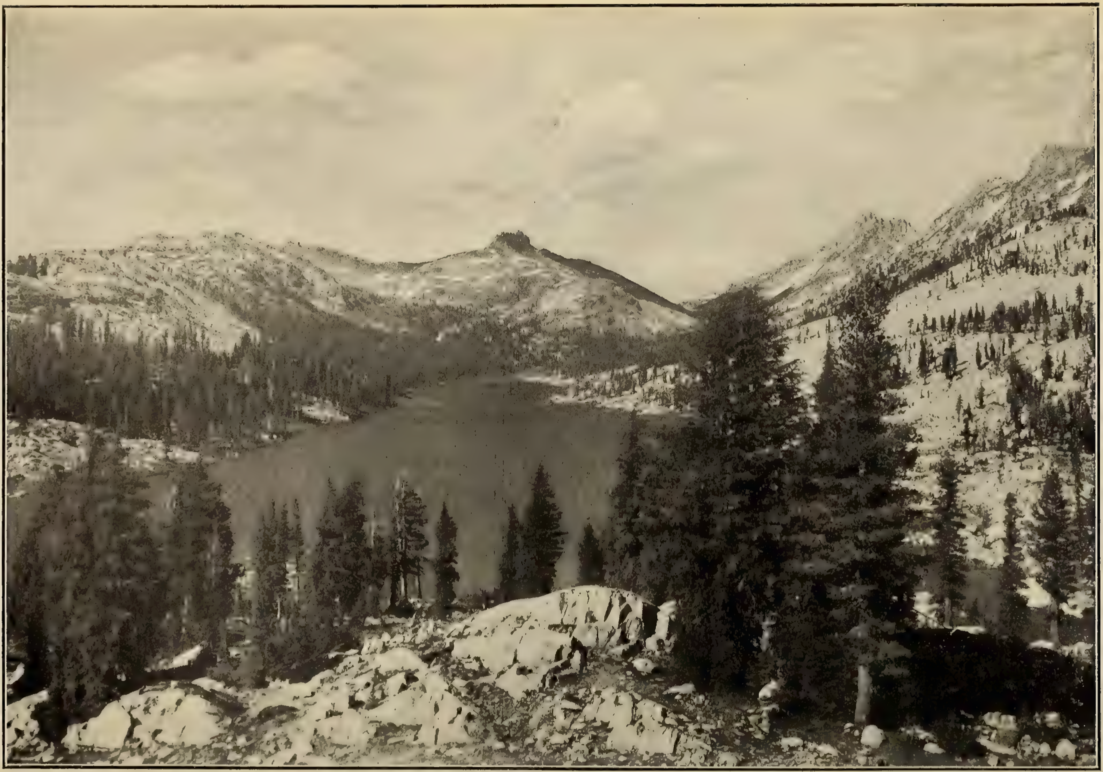
The only part of the trail on the whole trip retraced was from Tilden Lake to Kerrick Cañon. Returning to the latter on a Sunday afternoon, the camp-fire gathering at night was devoted to sacred songs and religious services. What strange scenes and sounds to those cañon walls, that hitherto had heard only the songs of birds, the cries of wild beasts, the baas of the hoofed locusts, and the rude, profane language of their Basque herders!

The following day Rancheria Mountain was reached, many of the party arriving before noon. All doubts as to the sufficiency of provisions, threatened by abnormal appetites, were dispelled by the timely appearance of abundant supplies from the cache at Hetch Hetchy, and the day was given over to pure æsthetic delight. The view from the mountain is one of the most fascinating in the Sierra. At its foot, nearly five thousand feet below, lay Pate Valley, with its meadows and groves through which the Tuolumne River peacefully flowed after its wild career above; in front and to the east and west rose the stupendous walls of the cañon; far to the southeast the eye beheld the glorious array of white summit peaks, and in the far west the purple, forest-clad ridges reached into the haze of the San Joaquin.

From Rancheria Mountain, in one morning, we dropped down six thousand feet to Hetch Hetchy Valley, where we spent two days in luxurious idleness, renewing acquaintance with its rocks, walls, cascades, trees and flowers—old friends whom many of us had known, but had not seen for years, and for whom we found time had not loosened our ties of affection. As we left the valley early in the morning, each breathed a silent prayer that this temple of the gods, with its stupendous walls and magnificent falls, its picturesque oaks sheltering innumerable birds that keep the air vibrant with their joyous songs, its velvety meadows resplendent with ferns and flowers, its limpid stream offering new charms at every bend in its winding length, and Kolana Rock, the presiding deity of the valley, brilliant in the rays of the rising sun,—that this valley, with its charms and inspirations, should not be transformed into an unsightly storage reservoir to satisfy the as yet unjustified demand of a municipality at the irreparable expense of the nation.



LOOKING UP THE HETCH HETCHY VALLEY FROM THE LAKE ELEANOR TRAIL.
Photograph by Herbert W. Gleason.


Saurian Crest
Tower Peak

TILDEN LAKE, IN THE NORTHERN PORTION OF THE YOSEMITE NATIONAL PARK.
Photograph by Herbert W. Gleason.

Two days later we reassembled at El Portal to reluctantly don the habiliments and assume the conventionalities of civilization. Our outing was at an end, but we brought back with us renewed physical energy, mental strength and inspiration to bear the burdens and meet the problems of life; ineffaceable memories of the rugged peaks, the glacier lakes and meadows, the crystal streams, the stately forests, the birds and the flowers; pleasant recollections of camp-fire talks by Professor Jepson on the conifers of the Sierra, by Dr. Badè on the birds of the region, by Mr. Colby on John Muir and his work, and talks and songs by many others; and, best of all, the assurance of warm friendships made and memories of genial good comradeship throughout the Outing.

SOME BIRDS OF THE HIGH SIERRA.

By William Frederic Bade.

With photographs by the author.

An occasional friendly letter of inquiry since we returned from last summer's outing has reminded me that many of those who saw me hunt birds of the High Sierra with a camera are interested to know the results. During previous excursions into the Sierra Nevada, the remarkably interesting avifauna of the boreal zone had aroused in me a desire to return some time with a better photographic equipment than the one with which I secured the water ouzel pictures in 1903.* After a long absence from the camp fires of the Sierra Club, circumstances made it possible for me to join the uncommonly adventurous outing of 1911. Lightness and compactness being the main consideration, I took along a No. 3 Special Kodak, 3¼x4¼ in., with a Zeiss Kodak anastigmat lens, f.6.3, and a compound shutter with a maximum speed of one two-hundred and fiftieth of a second.

My first opportunity presented itself in the Little Yosemite, where Sierra Juncos (*Junco oreganus thurberi*) were found nesting everywhere. A conspicuous flash of white outer tail feathers on the edge of the trail usually betrayed the presence of a junco's nest. Their manner, as a rule, was quite confiding. Some of the females, without attempting to decoy, made such an ostentatious display of themselves in leaving the nest that their purpose to divert attention from it was quite plain. On the tenth of July, toward evening, I flushed a junco near the trail in Little Yosemite. Upon investigation I found a nest, with incubated eggs, in the grass under a young pine tree, and close to the edge of a little brook. After entirely disappearing for a minute or two, the female came flitting back stealthily through the low pine growth utter-

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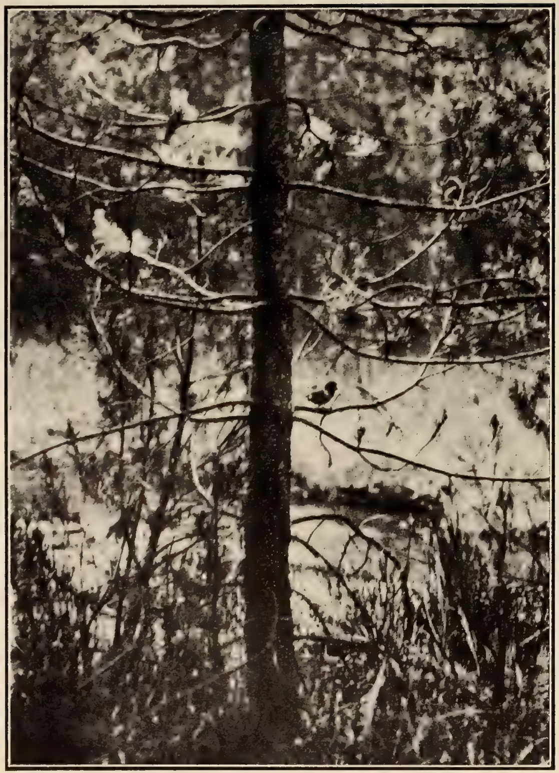
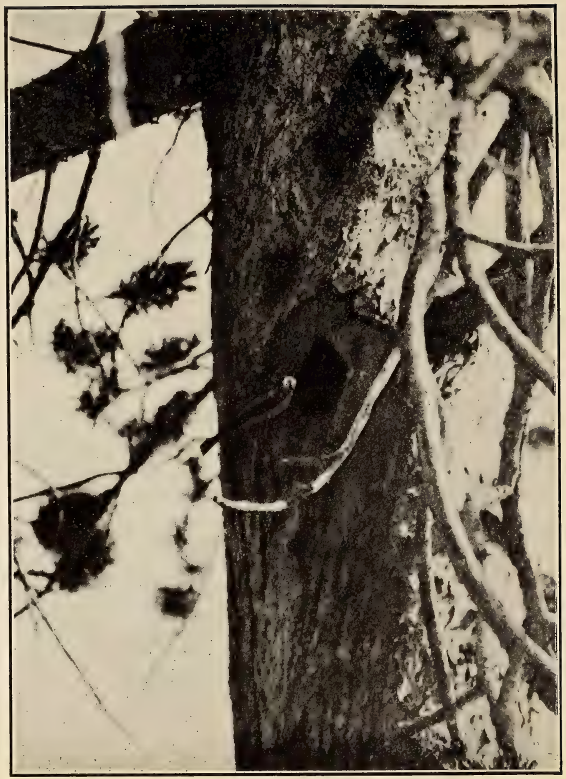
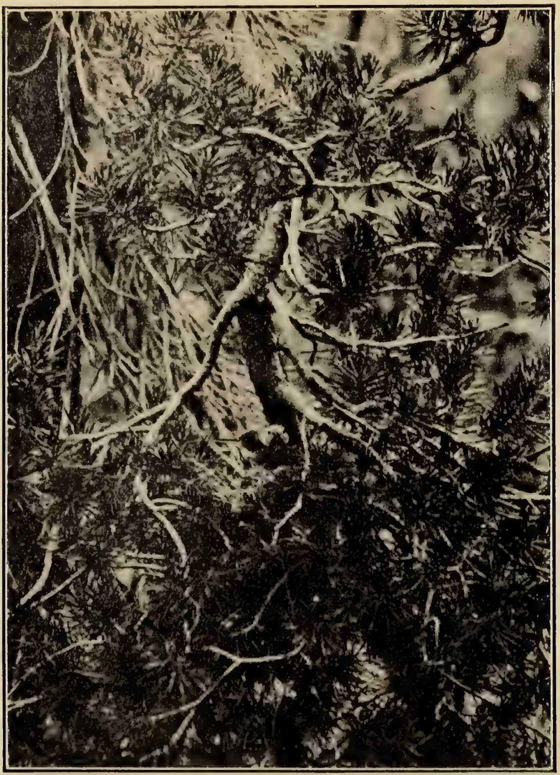
*See Sierra Club Bulletin, Vol. V, No. 2, 1904, The Water-Ouzel at Home.



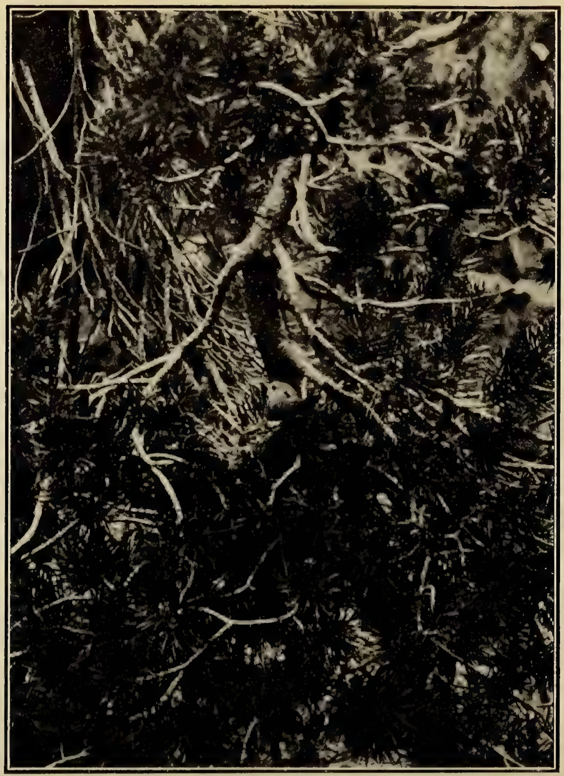
SIERRA JUNCO ABOVE HIS NEST.



MOUNTAIN CHICKADEE ON HIS DOOR-STEP WITH A FEATHER IN HIS BILL.



FRONT VIEW OF SIERRA HERMIT THRUSH.



SIDE AND REAR VIEW OF THE SAME.

ing her plaintive *tsip*. Remaining perfectly motionless, not more than ten feet from the nest, I secured a number of photographs, one of them given herewith. She showed no hesitation in returning to the nest while I was there, and I had to flush her twice in order to get a chance to photograph her. Only during the last two feet of her approach to the nest did she try to escape observation by taking cover behind weeds and branches. A thunderstorm was brewing and darkness was falling swiftly as I left the little pine tree that sheltered her home, and I hope she succeeded in raising her gentle brood without further molestation.

The next day, at Lake Merced, I discovered another nest of Sierra Juncos. It was sunk into a tiny shelf of moss on the side of a rocky declivity. Bunches of alum-root hung their feathery panicles of blossoms over the four fledgelings who could not have emerged from the egg more than a week before our arrival. One forenoon I tucked myself away in a niche under a projecting shelf of rock opposite the nest and awaited developments. I was not more than five feet from the nest and had little room to manipulate my kodak. There I sat motionless for about an hour. Being within plain sight of the birds, it was a long time before they dared to approach. They kept flitting about, anxiously eyeing me to see whether I was dangerous. Sometimes they seemed to make above me as loud a fluttering with their wings as possible to tempt me into a threatening move if I was so minded.

Solicitude for their young and the domestic instinct to feed them at last overcame their misgivings. All at once Madame Junco shyly fluttered to the nest, hastily deposited her catch of insects in the nearest bill, and flew away. Soon both came regularly at short intervals, and I was enabled to obtain a number of photographs. The one shown herewith exhibits the female at the edge of the nest just after feeding. Unfortunately, the light was not very strong so that I was unable to stop down sufficiently to obtain sharp definition.

One comical incident occurred while I was waiting for the birds to lose their fear of me. A chipmunk entered the niche in which I was sitting, from the rear, and crawled on my shoulder without suspecting that anything so motionless could be alive. As I turned my head to look at him he nearly had heart failure. He let out a shriek and started out the way he had come, fell down the embankment and remembered very urgent business elsewhere. As he was passing along a big slab of granite, a full-grown alligator lizard was coming along on the other side. Both were in hot haste and neither could see the other until they met at the corner. Both of them simultaneously leaped and collided in mid-air, the lizard folding his long claws around the chipmunk as they rolled over. They picked themselves up in much disgust to pursue their separate ways, and the chipmunk, at least, must have considered his experiences a very peculiar chapter of accidents. He was wound up for a long run when I last saw him.

Not far from the same place, I found a mountain chickadee's (*Penthestes gambeli*) nest in an abandoned woodpecker hole about ten feet from the ground. They were building at the time, for they kept coming with nesting material, mostly feathers, in their bills. My presence immediately under the hole did not seem to worry them greatly, for they paid very little attention to me. Once, when one of them stayed in the hole an uncommonly long time, I hammered on the trunk of the tree with a stick. Presently, what seemed to be the female stuck her head out of the hole and, with more curiosity than alarm, looked down to see what could be the matter. I obtained two excellent photographs of them perched on their doorstep. The white superciliary line which breaks the jet black cap of the mountain chickadee gives him quite a harlequinish appearance, especially when, in quest of insects, he dangles upside down from the tips of pine twigs.

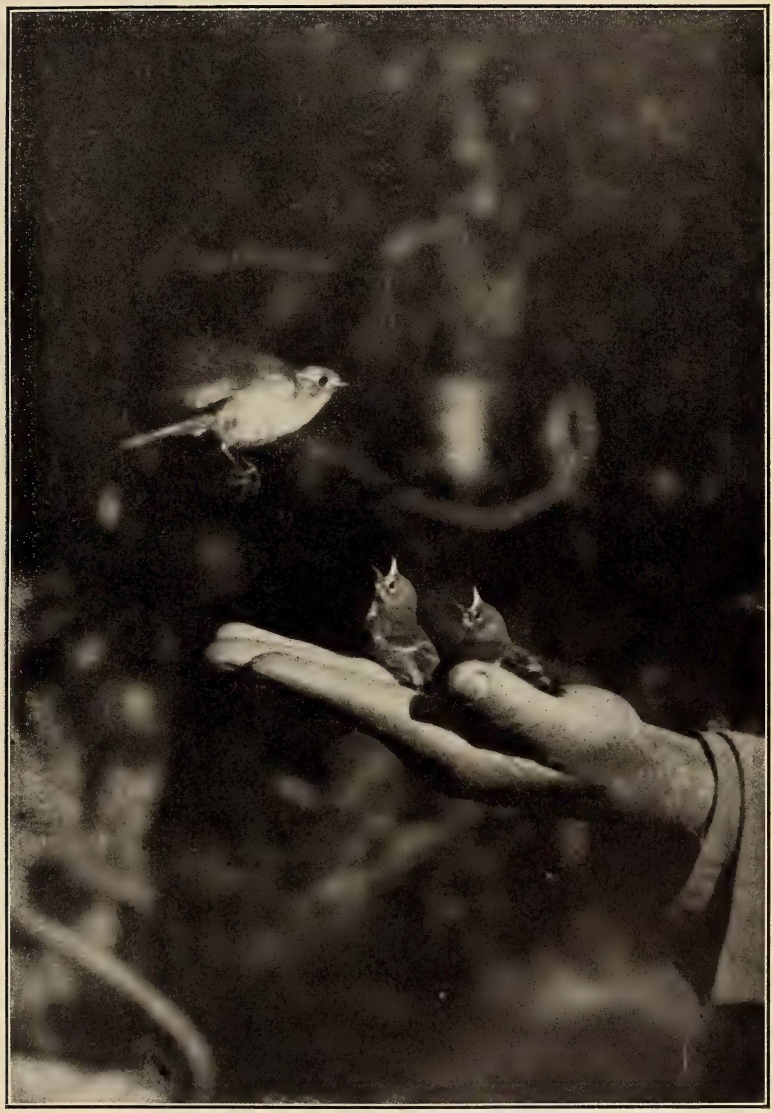
The whistling of this chickadee is one of the most striking bird notes one hears in the Sierra Nevada. It seems incredible that so small a bird can produce so penetrating a call. Sitting on the topmost branch of a pine tree, he begins to flute at the break of dawn, between three and four o'clock. There were more inquiries, on the part of High Sierrans, about the *de-phoé-de, de-phoé-de,* or *de-phoé-de-de,* of this little fellow than about the note of any other bird. The prevailing call at Lake Merced was a short introductory note followed by an emphatic long one and two short ones.

On the twenty-third of July we were camped in the Matterhorn Cañon. In the morning a medical friend, at whose hands I was undergoing repairs for a little accident in Return Creek Cañon, informed me that a rather large and beautiful bird had a nest where his party was encamped. Investigation showed it to be a Sierra Hermit Thrush (*Hylochichla guttata sequoiensis*), who, finding himself discovered, was excitedly see-sawing his reddish tail up and down and protesting with an occasional nervous *chuck.*

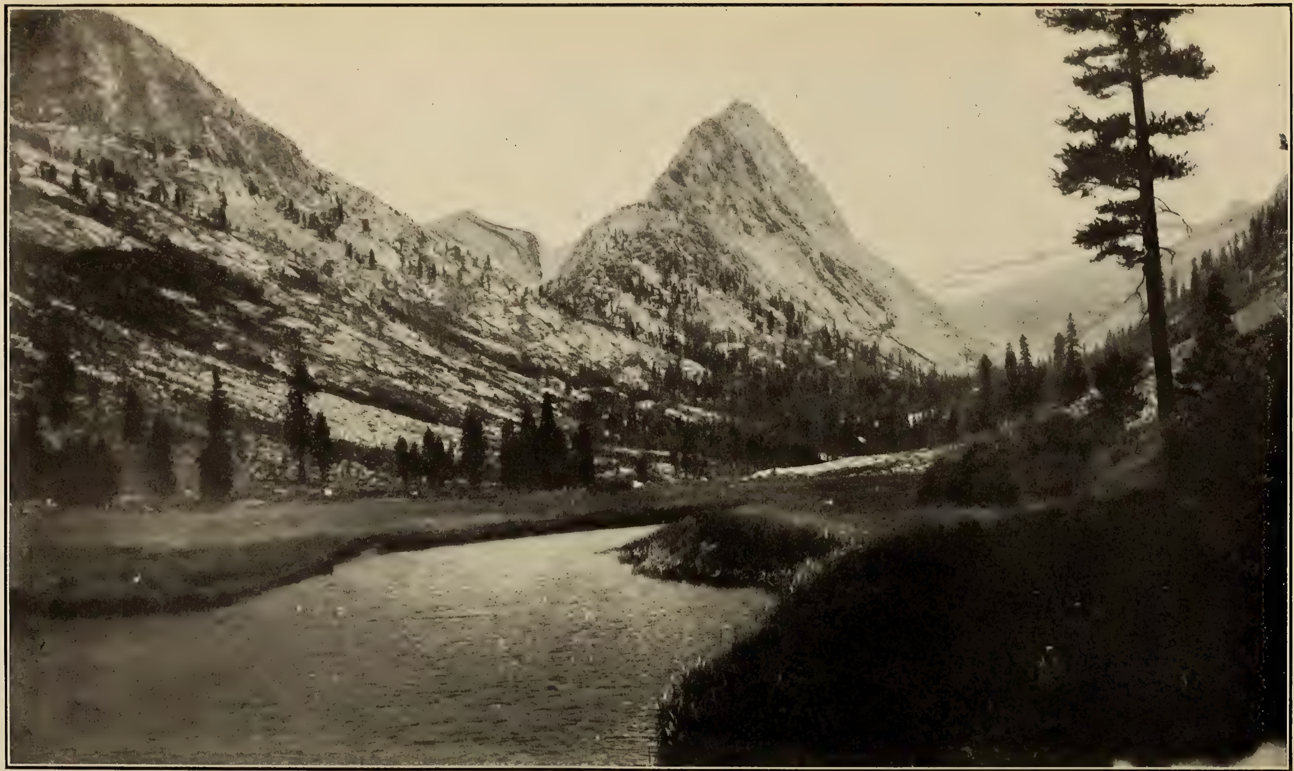
His nest was situated in a small two-leaf pine, only a few feet from the ground. In it were two plain greenish blue eggs. A sleeping bag had been hung on the tree, and men had been moving about almost in contact with the nest. Nevertheless Madame Hermit Thrush continued to occupy her home. But now that she observed attention fixed upon herself, she grew more and more nervous. I obtained two photographs of her in the act of approaching the nest, a rear and a front view. The beady eyes, the prettily mottled breast, and the distinguished bearing of the bird are easily perceptible. Knowing the shyness of this species, I feared that she might abandon the nest. I was told that after a few more approaches by campers she flew to a neighboring tree, uttered a few protesting *chucks,* and then disappeared in the piney wilderness to be seen no more.

One of my most remarkable experiences occurred at Benson Lake on July 26th. Some ladies of the party had found two half-fledged ruby-crowned kinglets (*Regulus* *calendula*) on the ground. They were old enough to have been coaxed out of the nest by the parent birds, for they were able to flutter short distances. At my suggestion they were kept in a box over night. The next morning I took them a little apart from the camp and waited, holding them in my hand. The little ones began to chirp, and soon a pair of kinglets came fluttering down, apparently surprised and delighted to find their offspring still alive.

For a minute or two they busily fluttered about branches of nearby trees, kinglet fashion, and then, to my great surprise, they flew straight to the fledgelings I was holding in my hand, and shoved their catch of insects into the youngsters' gaping throats. This was done repeatedly. Occasionally the parent birds lit for a moment on my hand, but usually they hovered over the young ones in the act of feeding. A friend used my camera to obtain several photographs. It was too early in the morning to employ high shutter speed, consequently few of the photographs turned out satisfactorily. But the one given herewith shows the bird in the act of coming down to feed the little ones.



RUBY-CROWNED KINGLET COMING TO FEED YOUNG IN AUTHOR'S HAND.
Photograph by Miss Atterbury with the author's camera.



LOOKING UP THE EASTERN BRANCH OF ROARING RIVER, THE WHALEBACK SHOWING IN THE MIDDLE DISTANCE.
Photograph by Arthur L. Jordan.

KNAPSACKING ACROSS THE KINGS-KERN DIVIDE.

By William E. Colby.

During the summer of 1910 while on the Club Outing, the writer took two delightful knapsack trips. An account of the first one follows:

The Club was encamped on one of its main side trips at the upper end of the Vidette Meadows, near Kearsarge Pass. The exquisitely sculptured granite pyramid of the East Vidette towered into the sky on the one hand and the jagged crest line of the Kearsarge Pinnacles enclosed us on the other, while the lace-like tracery of Vidette Falls dimly seen through the sturdy Alpine forest and the flower starred meadows close by, added a delicate touch to the otherwise stern and forbidding grandeur. Outfitting ourselves from the convenient Club commissary with those light weight but nourishing foods which are the knapsacker's delight, a small party of us started up the main stream toward Center Basin and taking the westerly branch where it forks at the base of Center Peak, kept on up the left-hand side of the stream skirting the slope of the Peak.

We took two pack animals and four five-gallon fish cans with us intending to try to cross the main Kings-Kern Divide through the second gap to the west of Junction Peak and bring back some of the famous Golden trout to plant in the main stream which was fishless above Vidette Meadows. An old Sierra Club Bulletin had reported the rumor of an old sheep trail leading over this pass and subsequent investigation at the request of the writer made by a party visiting the region had confirmed the existence of the old trail, but with little encouragement as to its practicability without considerable repair. After some search we discovered the signs of the old trail crossing the branch stream just below some falls and then continuing along on a rough rocky ridge leading toward the pass. We found the going very rough for animals, but with a little work it could be greatly improved. The signs of the trail led down to a small lake located just below the pass and keeping close to the lake rounded its easterly shore and zigzagged up the steep slope leading directly to the pass. The trail leads into the notch of the pass and on first arrival one is forced to the conclusion that he is the victim of a huge joke. He finds himself standing at an altitude of about 13,000 ft. on a sharp edge of the main Kings-Kern Divide amid a bewildering array of splintered and jagged 14,000-foot peaks, while to the southwest is stretched out the grand panorama of the Kern River basin. At his feet the Kern side of the Divide drops away with an appalling steepness. Close search, however, disclosed the trail carefully built and leading up a few yards above the notch of the pass to the right, and then winding sharply down into a steep chimney, which was, even then, in the middle of July, choked at its head with snow. Below the snow extended a chute of loose rock standing at a very uncertain state of equilibrium. One of the mules, at this juncture, fortunately for its own preservation, had cast a shoe and we decided to abandon the idea of taking the animals over the pass. Undoubtedly it was feasible to have taken animals over, as it has been done in the past, but it is extremely questionable whether they could be brought back to the pass again from the Kern side. *Facilis descensus Averni, sed etc.*

Progress was rapid, aided by gravity and no longer delayed by the slow progress of the animals. We quickly crossed Tyndall Creek and reached the southerly branch of East Creek by nightfall, where we camped. Unhampered by animals we could easily have reached Crabtree Meadow at the base of Whitney that day. Early the next morning our party, except Mr. Arthur

Jordan and the writer, started to climb Mt. Whitney, 14,501 ft. We had climbed it before and I was anxious to ascertain how the Golden trout were flourishing which we had transplanted in 1908 when on the Kern River Outing. We followed the mountaineers as far as Crabtree Meadow. As we descended into the meadow, Mt. Whitney and its neighboring summits were aglow with the early flood of morning light and out of the brilliance sailing majestically toward us, as if a messenger from the mountain itself, came a Golden Eagle, which soon disappeared in the immense void of the Kern Cañon to the West.

We examined the stream in Crabtree Meadow and saw a few Golden trout, the result of the Sierra Club's planting in 1908. There were three generations in evidence, the largest being at least fifteen inches in length. We hastened on and before long descended into Rock Creek basin, one of the tributaries of which we then ascended to a lake which had also been planted in 1908.

A storm was threatening, with black ominous clouds driving past, and as we reached the lake shortly after noon, its surface was ruffled by the wind and large drops of rain. Seeking the shelter of some large projecting granite slabs on the further side of the lake, we ate our lunch without seeing signs of any trout. Wearied from our strenuous exercise, we both fell asleep. I awakened in about half an hour. The storm had blown past and the sun was shining on the calm surface of the lake which was broken by the rising of numbers of trout some distance off shore. I hastened down to the margin of the lake and with a small spinner managed to induce one of the trout to come close enough to examine. He proved to be a large one—fifteen to eighteen inches in length and still retaining the golden coloration. Numbers of smaller trout indicated that they had thrived in their new environment.

We returned to Crabtree Meadows that evening reaching our knapsacks, which we had left cached there, long after dark. Chaplain Clemens and his wife were there before us, having crossed the Kings-Kern Divide that morning. Their cheery campfire was a welcome beacon as we came out on the high ridge above Crabtree Meadows, and we were glad to greet them.

They climbed Whitney the day following, while we turned toward the head of the Kern Cañon, having resolved to return to the main Sierra Club camp in Kings River canyon by a new route. We cut across country and dropped down into Junction Meadows over some very steep bluffs that required careful going. We found Mr. Willoughby Rodman and son and Mr. J. M. Elliott, Jr., encamped by the main river and enjoying a feast of trout and wild onions, in which we gladly joined. Shortly after noon, they started for Harrison Pass and we left them and turned into the Cañon of the Kern-Kaweah River. Just below the beautiful falls of that stream where it leaps out to join the main Kern, we caught a specimen of a strange trout similar to one which I had taken in the same vicinity in 1908. Like a Golden trout in absence of scales and spots, it has none of the wonderful golden color of that trout, but is sooty gray and rusty brown instead. I was prepared to preserve this specimen in a jar which I was carrying to take it where it could be identified.*

We climbed into the lower end of the magnificent Kern-Keweah Cañon. Except for the absence of any extensive level floor, it is strikingly Yosemite-like with its towering cliffs and sculptured walls. Stains on the faces of these sheer cliffs give evidence of wonderfully picturesque waterfalls which, earlier in the season, to one below must seem to pour from the sky. We followed up the bed of this wild and trackless gorge past several beautiful glacial lakes and finally darkness forced us to

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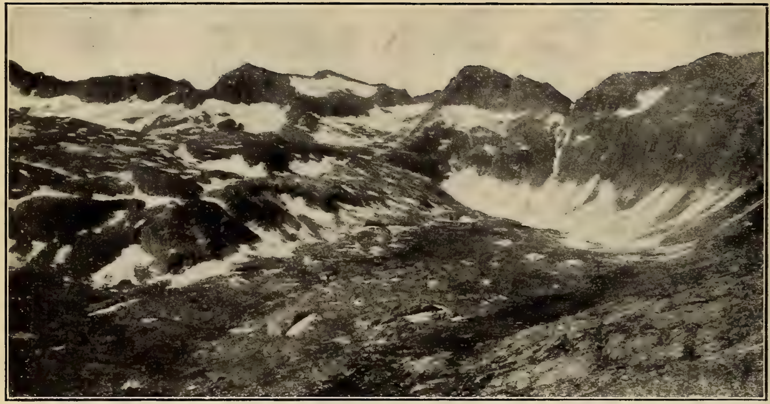
*Dr. David Starr Jordan states that this specimen is Salmo Roosevelti, differing from the type only in lacking the brilliant coloring. SIERRA CLUB BULLETIN, Vol. VIII, p. 75.

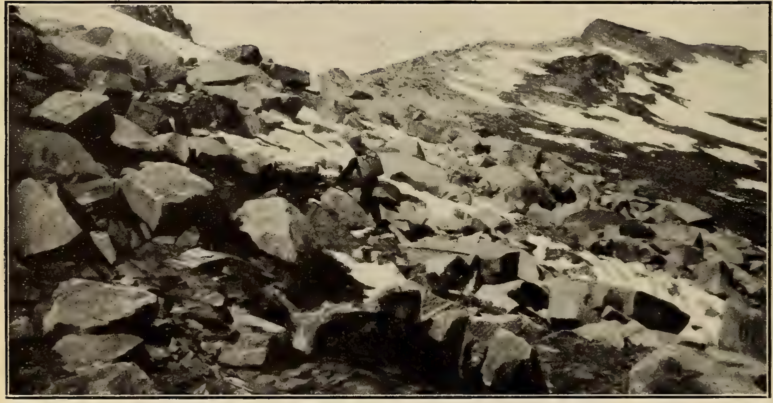
LOOKING DOWN FROM BASE OF CENTER PEAK.

THE KINGS-KERN PASS FROM THE KERN SIDE.

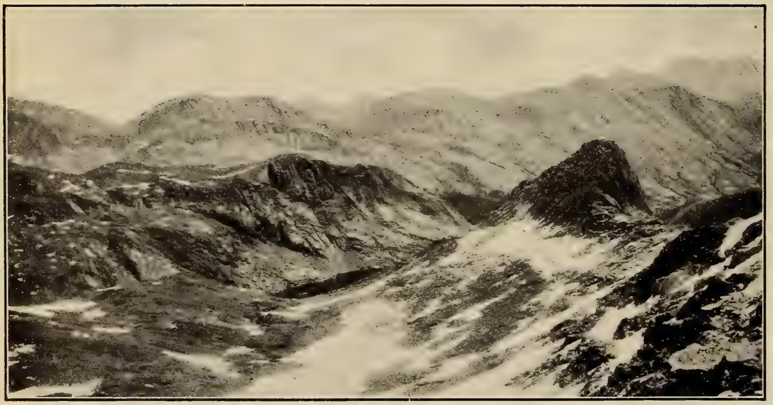
A LAKE ON THE KERN-KAWEAH RIVER.
Photographs by Arthur L. Jordan.



THE CLIFFS OF THE UPPER KERN-KAWEAH.



NEARING TRIPLE DIVIDE PEAK PASS.



LOOKING DOWN ROARING RIVER FROM THE PASS.
Photographs by Arthur L. Jordan.

camp. We selected a fine grove of two-leafed pines beside the roaring stream whose banks were thickly carpeted with Bryanthus heather.

Early the next morning we were on our way and soon reached the lower end of the main amphitheater where the stream heads. Here it makes a sweeping curve back on itself and almost parallels its original course. We were planning to cross the Kings-Kern Divide and drop into the headwaters of Roaring River. We found the wall of this upper basin to consist of sheer savage looking cliffs all along its southerly side. We had expected to clamber up a narrow cleft indicated on the map but found it blocked by a foaming series of falls. A little further along the wall, we started up a steep talus slope and by carefully picking our way managed to climb out onto the ridge above. We found this ridge separated the main basin from a small amphitheater in which headed the stream forming the series of falls which had just blocked our progress. We easily crossed this amphitheater and reached a pass on the main Kings-Kern (Great Western) Divide just north of Triple Divide Peak. The distance of but a few inches determines whether raindrops falling on this peak will flow into the Kern, Kings or Kaweah watersheds. As may be imagined, the view from this culminating portion of the divide is superb. A wilderness of peaks, snow fields, lakes and cañons greets the eye. Unless I am greatly mistaken, we saw some of the "Big Trees" of the Giant Forest.

While sitting in the notch of the pass (12,500 ft.) a hummingbird, probably attracted by a gaudy trout fly which I had fastened in my hat-band, poised itself in the air within a few inches of my ear and remained there several seconds, when, discovering the deception, it darted off to sip honey from the throats of the brilliant Alpine flowers which grow in sheltered sun-exposed nooks of even that wild and forbidding region.

Descending a steep chimney of loose rock, we plunged rapidly across a huge snow field and down a talus slope where we found, to our surprise, a well built trail. We followed this down to the head of the main Deadman Cañon, the more easterly of the two nearly parallel branches of Roaring River. Here we found the ruins of a mining camp. It would be difficult to describe all the beautiful features of our trip that day as we hurried down the cañon, between sculptured walls, following the foaming river. The succession of flower gardens, groves and meadows that we passed through was bewildering in its beauty and variety. I shall always recall the spot where we rested at noon. Up the cañon, Whaleback formed a perfect pyramid in the center distance, with snow-capped peaks in the background. We had thrown ourselves on the long velvety grass of a wonderful meadow and the stream here had widened out almost to a tranquil lake. Half a dozen partly grown wild ducklings, probably Golden Eye (*Clangula clangula Americana*), came working their way up stream close to the grassy bank within a few feet of us, and their cheery notes as they talked to one another indicated that they were utterly unconscious of our presence.

We continued on down the cañon and soon met the advance guard of the bands of cattle which are driven into the Roaring River region every season. Flower gardens were trampled and the odor of cattle was everywhere, even the water becoming unpleasant to the taste. We were glad to leave the cañon, which we did a short distance below the mouth of Brewer Creek and climbing up the easterly wall we crossed Moraine Meadows and found ourselves in untouched wild gardens again. Climbing to the saddle between Avalanche Peak and Sphinx Crest we dropped down the steep cañon of Avalanche Creek, and began to cut across diagonally just above the steep cliffs of the Kings River Cañon, intending to reach the head of the rocky chute which leads down to the cañon floor just to the East of the Grand Sentinel. But darkness overtook us and fearing that we might mistake the right gully and be led to the brink of the dangerous precipices which intercept all the other numerous gullies which lead down from above, we camped where we were. Never have I spent a night anywhere just like that one! We were on an unusually steep mountain side and the only ground we could discover approaching a level character was an area of a few square feet behind a large boulder. By building up a rude wall of stones and logs to keep from rolling down the mountain side, we managed to pass the night in comparative comfort. At daybreak we were up and ate the few crumbs of food left in our knapsacks. As we hastened down the rocky chute leading to the floor of Kings River Cañon, we witnessed the wonderful effects of early morning as the light poured over the jagged crest of the Sierra and filled cañon after cañon with its brilliant flood. We reached camp in time for an early breakfast and were glad indeed to throw down our knapsacks which had burdened us during these strenuous days.

Some day there may be well traveled trails crossing the passes just described. Considerable work will have to be done first, but a trail now leads up Deadman Cañon to its head and Prof. Dudley and party took animals all the way up the Kern-Kaweah. Only a short distance remains to be made passable, and I think it is an entirely feasible and probably the best route for the future from Kings River Cañon to Mt. Whitney.

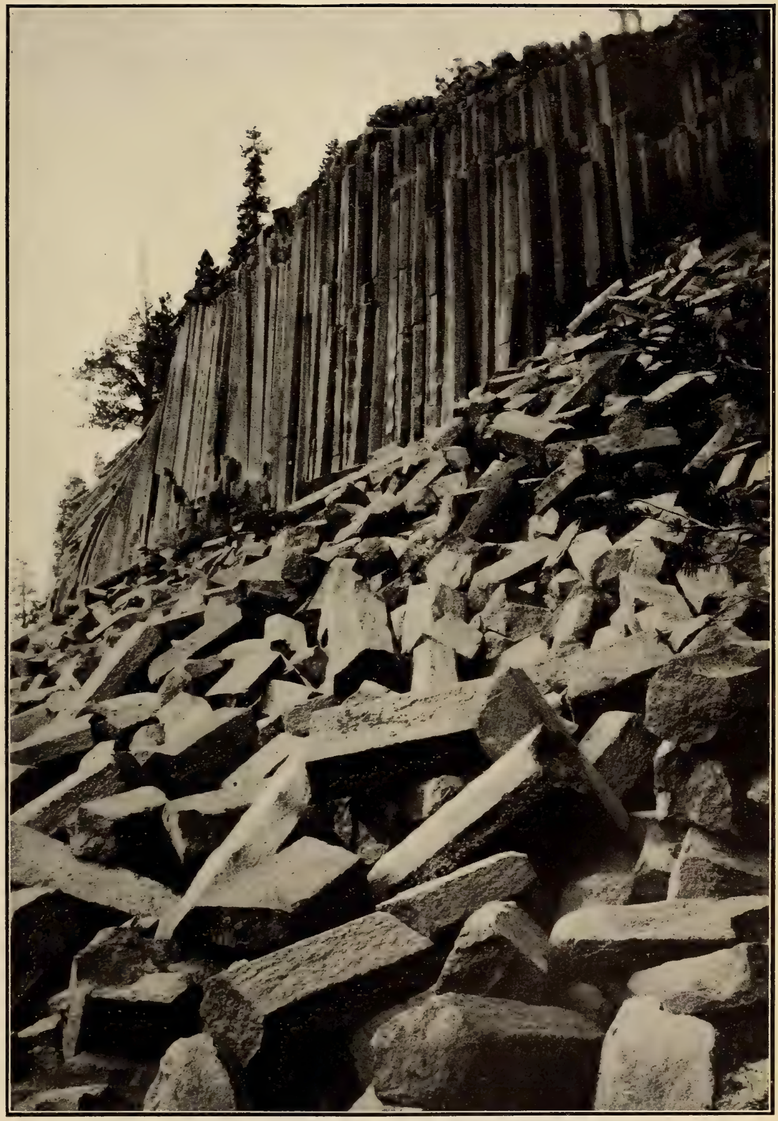
THE DEVIL'S POSTPILE.

By J. N. Le Conte.

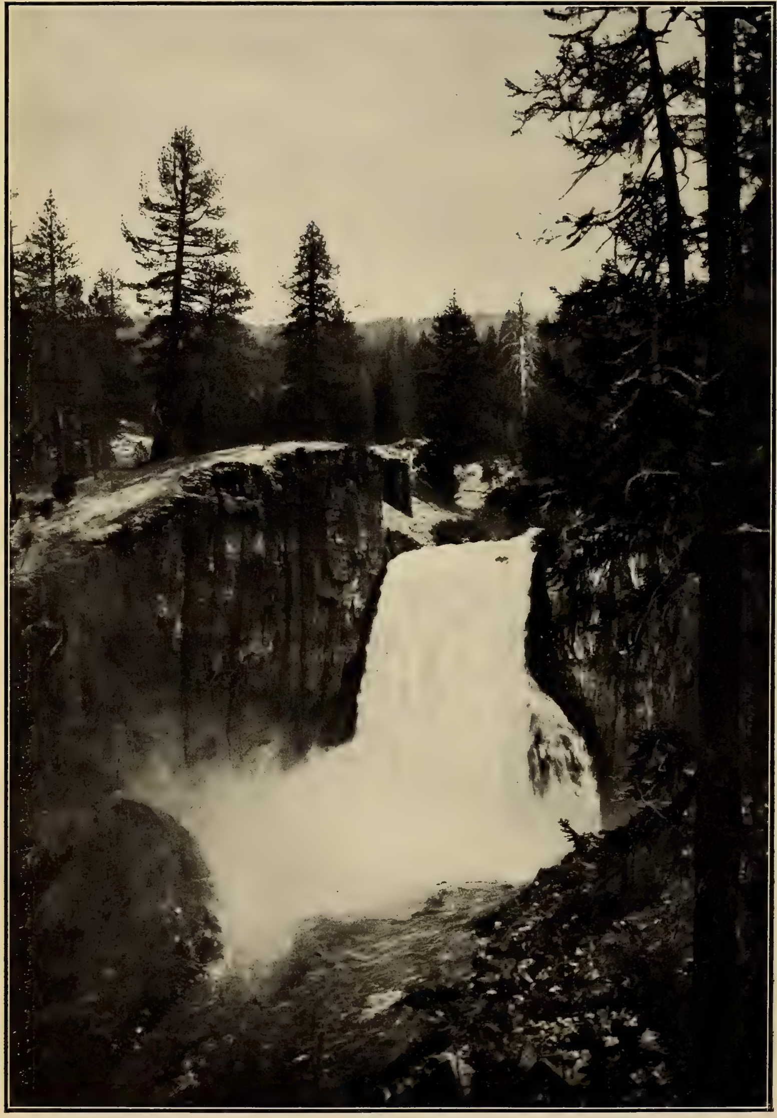
The creation by the President of the "Devil's Postpile National Monument" on the 6th of July last calls attention more strongly than ever to the beautiful region of the Middle Fork of the San Joaquin River. Not only does this basin embrace such curiosities as the recently established monument, but also one of the finest groups of mountain peaks, the finest group of residual glaciers, and the finest evidences of recent volcanic activity to be found in the Sierra Nevada. With the creation of this National monument, travel will be still more strongly attracted in this direction, so that a few words descriptive of the region will not be amiss.

The culminating points of the upper Middle Fork lie in the Ritter group, which consists of Mt. Ritter, Banner Peak, and the Minarets. These form a very high and rugged divide trending north and south, and drained on the east by the Middle and on the west by the North Fork of the San Joaquin River. The cañons on both sides are cut to a great depth, so that the mountains between rise to a very considerable height above the surrounding country. The peaks average between 12,500 and 13,150 feet above sea-level, and the rock, unlike most of the Sierra, is black metamorphic. The brilliancy of contrast between this and the snow, the exceptional ruggedness of sculpture characteristic of this type of rock, and the great height of the peaks, both absolute and relative, unite to make this group the most magnificent piece of mountain scenery which we have in the Sierra Nevada.

This splendid mountain mass does not lie upon the main crest, but is embraced, as has been stated, by two



THE DEVIL'S POSTPILE, A WONDERFUL CLIFF OF COLUMNAR BASALT.
Photograph by J. N. Le Conte.



RAINBOW FALLS, DEVIL'S POSTPILE NATIONAL MONUMENT.
Photograph by J. N. Le Conte.

branches of the San Joaquin. The crest itself is not so high, and shoots off to the east from a point a mile or so north of Ritter. It then turns southeasterly and breaks down into a rolling mass of mountains whose lowest point is at the Mammoth Pass. The Middle Fork of the San Joaquin heads in Thousand Island Lake at the base of Banner Peak, flows easterly and then southeasterly, following the depression between the main crest and the Ritter group. The elevation of the lake at its source is 9,800 feet. Mt. Ritter rises sheer 3,500 feet above it and composes one of the most stupendous mountain pictures which the Sierra affords. The lake itself is very nearly at the timber-line, and furnishes fair camping for those who wish to ascend the mountain by way of its precipitous northern face.

At the outlet of the lake trails will be found following down the river cañon, but the main route is by way of the Agnew Trail, which follows along the mountain-slope to the east of the stream and about one thousand feet above it. Shortly after leaving the lake the volcanic rock is encountered, which covers the whole basin of the upper Middle Fork as far as the Fish Creek Divide. The route down the cañon is said to be very beautiful. I have not traversed the cañon myself, but a very complete description of it is given by Mr. T. S. Solomons in one of the early publications of the Sierra Club.* The upper trail, however, is well traveled and easily followed. It furnishes a magnificent view of the precipitous eastern face of the Ritter group. From its snowfields several large streams—Badger, Shadow and Minaret creeks—and a number of smaller ones plunge in cascades over the opposite cliffs into the cañon below.

Passing still southward through Agnew Meadow and through beautifully forested country, the trail reaches the river again at Pumice Flats. All this region, as well as that about Mammoth Pass, is covered with pumice and fine volcanic ash. South of Pumice Flat the trail passes between the Devil's Postpile and the river, and then joins the main Mammoth Trail, which connects the settlements near Wawona and Summerdale with Long Valley on the eastern slope.

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* "Among the Sources of the San Joaquin," T. S. Solomons, SIERRA CLUB BULLETIN, Vol. I, No. 3, Jan. 1894, pp. 71-74.

The Devil's Postpile is a wonderful cliff of columnar basalt facing the river. The columns are quite perfect prisms, nearly vertical, and fitted together like the cells of a honeycomb. Most of the prisms are pentagonal, though some are of four or six sides. The standing columns are about two feet in diameter and forty feet high. At the base of the cliff is an enormous pile of these prismatic fragments. The cliff facing the river furnishes the best example of this columnar basalt structure, but wherever the bedrock is exposed beneath the pumice covering the same formation can be seen.

Joining the Mammoth Trail and following it east about a mile, we come upon Reds Meadow. This is an ideal camping-spot—a fine luxuriant meadow fringed with splendid forest. Through it flows several clear rushing streams well stocked with trout, and a fine hot spring bubbles out of the hillside near by. From Reds Meadow the Mammoth Trail passes easterly over the Sierra summit, down past the Mammoth Lakes and mine to the Mineral Park settlement and out on the desert plains toward Owens River.

Following the San Joaquin River down about one and one-half miles below the Mammoth Crossing, we come upon the Rainbow Fall. This fall is formed by the entire volume of the Middle Fork pouring in a smooth broad sheet over a ledge of volcanic rock into a box cañon. The height of the fall is about one hundred and forty feet, its width perhaps ninety feet when the stream is in flood, and the drop is absolutely vertical. Both this and the Devil's Postpile are included in the recently established National monument. The area set aside is rectangular in form, one-half mile wide east and west and two and one-half miles long north and south.

In addition to the attractions in and around Reds Meadow there are others at a greater distance. About nine miles south is the magnificent cañon of Fish Creek, with the Red Slate group of peaks at its head. On the opposite side of the river the various tributaries flowing down from the Minarets are worthy of attention, particularly Shadow Creek, which drains the south slope of Mt. Ritter and from whose source an easy ascent of the mountain can be made. Fair trails, made for the most part by prospectors, cover the entire region, which is destined soon to become one of the best known portions of the High Sierra.

THE MAZAMA CLUB OUTING TO GLACIER PEAK.

By Marion Randall Parsons.

Dawn was breaking over the Columbia River when our Mazama Club party left the Pullmans at Wenatchee the morning of August third. A dingy river boat was whistling impatiently down at the landing as we hurriedly collected dunnage bags, knapsacks and alpenstocks and got them and ourselves aboard. Forty miles of slow cruising up the river followed, coasting around sand-bars, breasting foaming rapids, and struggling against the strong current until the skill of the deep sea navigator seemed trifling beside the problems of the river-boat's captain.

The country, once we left the Wenatchee Valley, was arid and desolate. Low, reddish brown hills almost barren of vegetation shut in the horizon on either side. The few homesteads were usually grouped in the more fertile deltas of the side streams. About midway of our journey a group of curiously marked cliffs and some vigorous yellow pines (*Pinus ponderosa*) growing along the shore gave a more picturesque setting to our slow progress. At Chelan Falls we left the river to drive five miles over the hills to Lakeside on Lake Chelan. There we embarked upon the "Lady of the Lake," a crazy little steamer loaded high with our luggage, with boxes and barrels of provisions, with four horses, with thirty-five mountaineers, and —least to be forgotten—a vigorous brass band.

Under the cloudy sky that afternoon the lower end of the lake lay smooth and unruffled, broken only at our steamer's wake into waves and ripples of gleaming silver. The wooded banks came mistily down to the water's edge, low hills at first, but rising as we traveled farther up the lake into high mountain peaks among whose rocky summits patches of snow still lingered. A flurry of rain met us about five o'clock, but later the clouds parted giving a lovely sunset glimpse of the snowy ranges beyond the Stehekin River. Nightfall brought us to Stehekin and the hospitality of the Field Hotel.

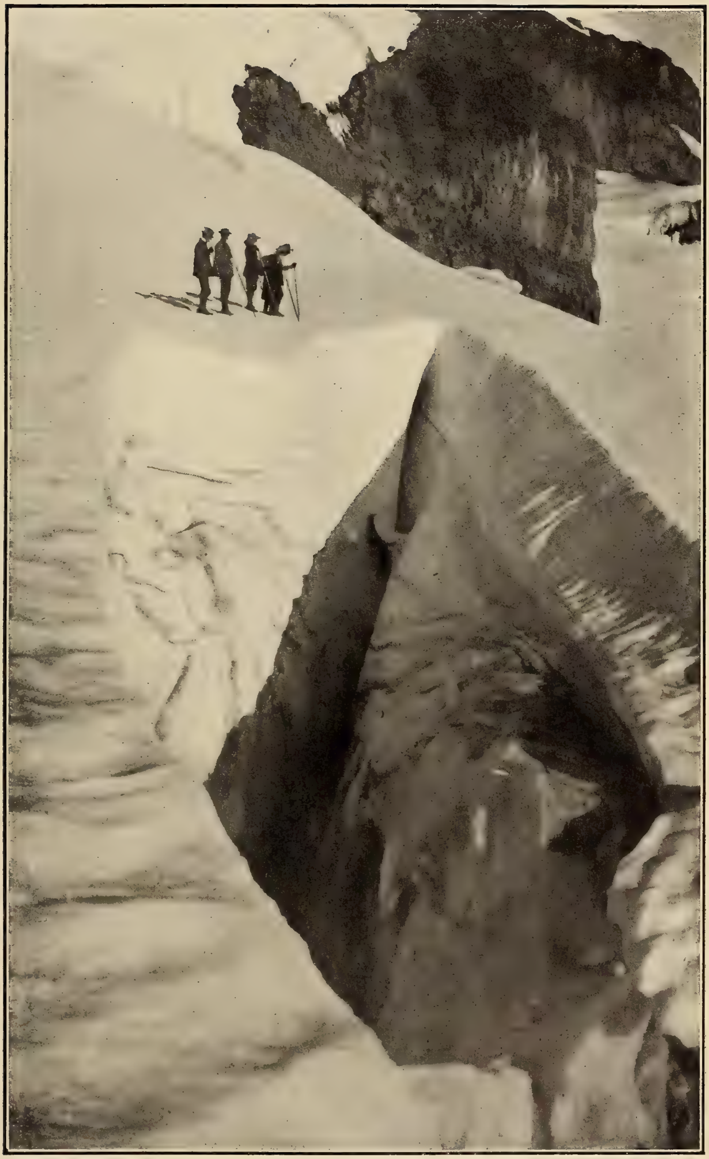
Ten miles up the Stehekin River was Bullion, our first night's camp. A good road leads thus far following the easy grade of the river. The Stehekin Cañon is not unlike many California cañons. Its granite walls rise from four to six thousand feet above the river; at their base lie great talus piles covered with brush, a favorite haunt of rattlesnakes as are the rocky moraines in the cañon bottom. The floor is in many places heavily wooded. Cottonwoods and yellow pines are intermingled with the ever present Douglas fir (*Pseudotsuga taxifolia*), some of the latter superb specimens, giants of their kind, whose wide-branching arms gave a grateful shelter from the shower that closed the day.

An early start was made next morning as seventeen and a half miles of steady uphill trail separated us from the next night's camp. We crossed the Stehekin River on a high-hung bridge, crossed Agnes Creek and started along the government trail leading up its eastern bank. For several miles the trail follows along a dry mountainside where a forest of tamarack pines (*Pinus contorta*), again suggests California. Then by a quick transition we are in Washington again, trailing through a typical forest of firs, hemlocks, cedars and white pines (*Pinus monticola*), a silent, dark, languorous place, deep carpeted with a luxuriant growth of ferns, moss and tiny, creeping green vines. Higher and higher the trail climbed, now up the South Fork of Agnes Creek, where occasionally a granite peak showed above the cañon wall. But the clouds soon closed in upon us, and as we reached the open parts of the cañon more than once a shower drove us to the shelter of some overhanging fir. By five o'clock rain began in earnest; the trail with each step became more miry and difficult, and camp was finally made two miles below the chosen site.

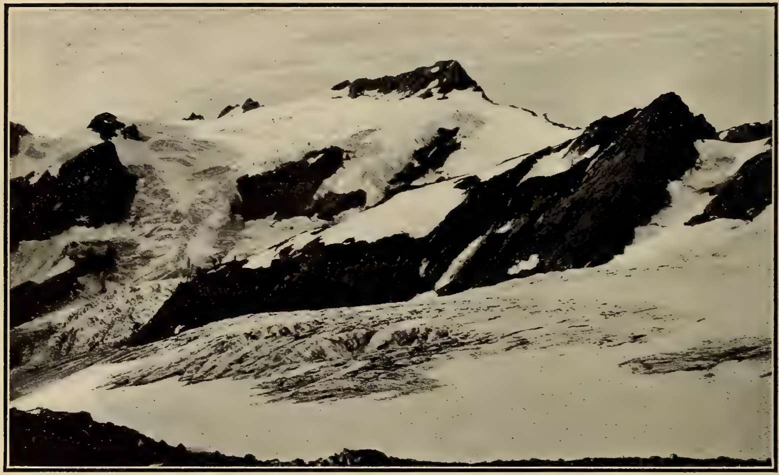
Clouds still overhung us next morning so that from the time we crossed Suiattle Pass until we reached permanent camp at Buck Creek Pass we caught scarcely a glimpse of the surrounding scenery. A visit to the Glacier Copper Mine; the shrill protests of an unseen colony of alarmed whistling marmots; a long climb through veils of driving mist with here and there a phantasmal tree form or a vision-like, distant snow-field showing in ghostly fashion through the fog; the open, sloping meadows of Glacier Pass where a bandanna-hooded, semi-frozen member of the advance party awaited us; a quick descent, and another long climb—these rise to memory as mile posts marking the passage of that gray day. As we rounded the last summit the fog lifted somewhat, and we saw, half a mile ahead of us, the green meadows and wooded ridges of Buck Creek Pass.

The mists soon closed in again. For twenty-four hours the clouds rolled past us, shutting out all view of our surroundings; but the second morning broke clear, and we were awakened by the cry, "Come, look at the mountain!" Hastily dressing, and running up the ridge to the west of camp we at last beheld the mountain we were to climb, and could appreciate, the more fully since it broke upon us all at once out of the clouds that had so long hidden it, the great beauty of this little-known region.

Glacier Peak, reaching an altitude of 10,436 feet, outtops all its companions by two thousand feet or more. To the southeast lies a beautiful range of rugged, dark, tumultuous peaks, all glacier-crowned and gleaming with snow-fields, the most picturesque of an almost infinite series of sharp ranges which, with their accompanying deeply cut cañons, have long served to keep Glacier Peak hidden and unknown. The whole region is much wilder and more alpine in character than are any of the regions surrounding the other great volcanic peaks of Washington, and it was as late as August, 1898, that the first ascent was made by the United States Geological Survey. Only three ascents previous to 1910 are recorded.



CREVASSE, EASTERN FACE OF GLACIER PEAK.
Photograph by Rodney L. Glisan, 1911.



UNNAMED PEAK SOUTH OF WHITE RIVER.

WHITE RIVER CAÑON.
Band of wild goats just above the left-hand portion of the snowbank.
Photographs by Rodney L. Glisan, 1911.

Timberline here is reached at an altitude of some 6500 feet. Above that for a thousand feet or more rise steep slopes of heather, thick carpets of pink bryanthus or white cassiope that reach upward to the rocky crests of the lesser ridges or meet the snow-fields of the higher chains. At 5800 feet, where the main camp was located, the alpine firs and hemlocks grow sturdily along the ridges or form picturesque groups among the meadows, to whose brilliant green is added a glorious profusion of wild flowers. Masses of purple lupines and asters, scarlet paintbrush, white castillea and valerian, yellow potentilla, blue gentians, shaggy-headed, quaint anemone akenes looking like wee Scotch terriers, pink cyclamen and mimulus—countless varieties lay thick in the meadows and climbed to the very crests of the hills. Lying on the broad summit of Flower Hill to the northwest of camp, one could overlook acres of these blooming, wind-rippled gardens rounding off against the sky.

For two days camp was deserted while climbing parties started out in all directions to explore the neighborhood. Perhaps the most interesting of the trips we took was along the ridge south of camp. Just above our meadow rose a rock-crowned green hill which was named Liberty Cap by The Mountaineers. Climbing to its summit, a thousand feet above camp, one found it to be the northern extremity of the divide between the Suiattle and Chiwawa watersheds. Along its backbone led a wild goat trail, a real Mazama trail that we were only too happy to follow as in some places the alpine firs grew over the ground in a close mat two or three feet thick that without the goat track would almost have barred progress. Each succeeding knoll along this sky-line trail climbed higher than the last until we stood upon an open hilltop, barren of trees, overlooking the glacier in which the Little Suiattle heads. Beyond the glacier rose the gleaming face of an unnamed peak lying across the White River Cañon, a peak that four men in our party climbed later, and where, it may be added, they were fortunate enough to see a band of eighteen goats. Southward our ridge extended in a series of sharp peaks, each with a precipitous eastern wall. On the east we looked into Buck Creek Cañon and down its length to the Chiwawa Valley. Northward we could follow the course of our fog-bound trail over Glacier Pass, and past the group of mountains on the western flank of Suiattle Pass, and beyond that fancied we could recognize the great snowfields of Mt. Sahale at the very head of the Stehekin, the goal of the first Mazama outing to the Chelan region in 1899. Glacier Peak lay to the west, wrapped in golden haze and purple shadows.

The main interest of the trip of course centered about the conquest of this mountain. On the first clear morning an advance party of five men had started for it to investigate the best route for the ascent. No trail to the mountain exists except the rough way blazed through the forest by The Mountaineers on their 1910 outing, which leads to a camp site on the mountain's flank whence the climb can easily be made. They reported to have taken horses as far as the Suiattle River, but we found the way so littered with new fallen trees and so swampy from recent rains that it was judged best to knapsack the entire ten miles to the base camp.

Three parties in all made the ascent, four men of the advance guard, two of whom climbed again three days later with the main party of nineteen, and a third group of six headed by the chairman of the outing committee. We who comprised the latter party made the trip in two days instead of the three allotted the main climb.

We left Buck Creek Pass early the morning of August 14th, equipped with knapsacks and cameras, with alpenstocks and ice axes in hand and with boots well fortified with ice calks. The way led down Meadow Creek through a series of alpine meadows where the shadows of tall firs threw long dark bars across the vivid green of the grass. The clouds had all disappeared; the sky was as brilliant a blue as on a Sierra morning and there was a clear, sharp tang in the air that presaged autumn even though the flowers of the brief summer were scarcely yet in bloom. But there is perhaps no day quite so perfect as that which holds this hint of coming change. Even a sunny April morning with all its wealth of blossoms and riot of bird songs lacks something of the charm of that hour when winter's hold is first loosened and the coming of spring heralded. For change and growth are intrinsic parts of the beauty of nature, and one secret of its deep appeal to us is this abounding promise of new life ever hastening to succeed the old, this radiant spirit of eternal youth that touches most closely the strongest, deepest instincts of our race.

Soon we had left the stream and were following the blazed way through the woods. A hot, dusty strip of burned timber separated the upland forest from the more luxuriant growth of the lower levels, markedly different in character, for we had to drop to 3,400 feet before reaching the Suiattle River. Half a mile up that stream a fallen log put us on the western side. So far the way had been clear enough, but beyond the Suiattle blazes became rarer and also more erratic as the trail makers of the previous year had marked several different courses over to Chocolate Creek. But with considerable brush fighting and a sharp eye ahead for blazes we soon made the creek and paused for an early lunch. A straight climb of three thousand feet lay ahead so we were quickly on the march again.

The crest of the first hill south of the creek formed an ascending route that led us out, some two miles above, on the rim of the Chocolate Glacier. Straight down, nearly a thousand feet below, lay the terminal moraine. Looking down the cañon and across the Suiattle we could see Buck Creek Pass, Chiwawa and Red Mountains, and far beyond them the ragged line of the Chelan Ranges. A goat trail followed close to the edge of the glacial cañon and for more than a mile we took our course along it, a picturesque way leading across heather slopes, under low-branching firs, and along rocky points, but never losing sight of the deep chasm of the glacier nor failing to give us the wide, distant panorama that the rest of the forest trail had denied us.

Camp lay just below timberline on a sloping bench south of the Chocolate Glacier. A thick growth of alpine firs and hemlocks screened us from the cold winds that blew off the snow-fields and furnished abundant boughs for most luxurious beds. The official party had left a liberal cache of provisions; but fearing the inroads of the Douglas squirrels, and not knowing whether the wild goats were as catholic in their tastes as their domesticated brethren, likewise having heard much comment concerning an alleged diet of soup endured by our predecessors, we had taken the precaution of bringing along a few extra dainties of our own. So an afternoon tea of canned tomatoes and blackberries made a pleasant introduction to a supper of soup and chocolate, while a can of pineapple added piquancy to the usual daybreak breakfast of soup, beans and hardtack.

Before the light had faded from the distant mountains we were in our sleeping bags. At three o'clock when we reluctantly left them again to prepare breakfast the moon was shining over a drift of fog that had entirely filled the Suiattle Cañon, a gleaming, silvery mass, most beautiful to look upon but auguring ill for the climb.

At four o'clock, when we started, the atmosphere about us was fairly clear, but as the light grew and we climbed higher, past the struggling timberline trees to the crest of a pumice ridge, the clouds drew in upon us ever closer and closer. For an hour we walked through a fog so dense that we could scarcely see the tiny, struggling pussy's-paws and dwarf lupines at our feet, and so cold that the moistened tendrils of hair above our ears froze.

A little after sunrise, however, the mists seemed to be torn apart and we could see the blue sky and far, far above us, the white summit of the mountain. From that time onward the clouds all lay below us, a creamy white, billowing sea faintly shadowed with palest opaline tints, rose,

THE CLOUD OCEAN FROM GLACIER PEAK.

CHOCOLATE GLACIER, EASTERN FACE OF GLACIER PEAK.
Photographs by Rodney L. Glisan, 1911.

GLACIER PEAK (RIGHT) AND RANGES TO SOUTHWARD.

NORTH STAR MOUNTAIN AND CLOUDY PASS FROM LYMAN GLACIER.
Photographs by Marion Randall Parsons, 1911.

yellow and pearly gray. Above the cloud ocean the black summits of the neighboring peaks rose like islands. Often on wintry days at sunset we may in fancy discern the shore line of an undiscovered country sketched in bright-toned cloud tracery upon the western sky. Here was a terrestrial likeness of that cloud-land coast, high capes and islands against whose dark shores the mist surf beat as silently as the waves of light upon the coast line of the sky.

Our pumice ridge ended in a thumb of loose, crumbling rock which in turn brought us to the edge of the upper ice-fields. Taking a devious course among enormous crevasses, icicle-hung and blue-shadowed, we reached at length the pumice ridge on the southern saddle, and climbed along it, and up the final rocky face to the summit. As the ice-fields of our mountain fell below us and our horizon widened, one by one the distant giant peaks came into sight—Rainier, St. Helens, Baker and Shuksan, all shining in full sunlight above the great sea of fog.

Before nine o'clock the easy climb was over, so we had ample time for a good rest and the consumption of a second can of tomatoes as well as for that leisurely enjoyment of the scene that a mountain top demands. On the southwest side, in a group of rocks that forms a portion of the ancient crater's rim, we found the record, and added our names to the twenty-one Mazamas already registered there. The crater is not so well defined as on Rainier or St. Helens. As on these mountains, and Baker as well, the actual summit is a rounding mound of snow. As long as we remained there the clouds to the west, between Rainier and Baker, remained almost unbroken, but towards the east and south they began to drift and break even before we reached the top. Vistas of cañons and mountain chains without number opened before us, the valleys all a soft monotone of blue.

A little before ten o'clock we started back. The loose pumice ridges, while giving heavy work on the climb, make easy going on the descent, so though the snow in no place permitted coasting, half past eleven saw us again in temporary camp. An hour later we were shouldering knapsacks for the homeward journey. The way seemed much longer and rougher on the return, the steep grade from the Suiattle to camp proving a heavy tax upon muscles already tired with a long climb and a still longer descent. Indeed the knapsacking to and from the base camp formed the hardest part of the trip, as the mountain itself is exceedingly easy to climb, at least on the eastern side. A horse trail could easily be built along the course laid out by The Mountaineers.

The woods and meadows were wonderfully beautiful in the late afternoon light. As we approached camp, Glacier Peak came into view once more, looking so distant and illusive through the evening mist that it seemed almost incredible that we had been standing on its summit less than ten hours before.

The greatest hardship of all was the five o'clock rising necessitated by our breaking camp next morning. Reluctantly enough we struck our tents and for the last time crossed the stream to feed our neighbors, the whistling marmots, now grown so tame that we could approach within three or four feet of them. It was another brilliantly clear day. The trail, though the same we had traversed on the incoming trip, seemed new to us all, the view from Glacier Pass with its wide panorama of Glacier Peak and the ranges to southward proving particularly fine. With only twelve miles to go and a long day ahead of us we could afford to loiter in the pleasant woods, take pictures, or yield to the lure of the huckleberry and strawberry patches.

The plan had been, after crossing Suiattle Pass, to turn eastward, over Cloudy Pass, and camp in North Star Park near Lyman Lake. We reached the top of Cloudy Pass about two o'clock, and for the rest of the afternoon wandered about its vicinity, choosing likely camp sites, admiring the scenery, and waiting for the pack-train. Hitherto that indispensable institution had given entire satisfaction, but this was its unlucky day. Six o'clock came and brought no sign of it. Finally the order was given to retrace steps and meet the tardy pack-train at the camping ground below Suiattle Pass. So we marched down the hill again, some thirty of us together, and there remains as one of the funniest recollections of the outing the vision of those jaded mountaineers tramping down an open zigzag, five or six lines of them, marching some to right, some to left, all the same distance apart and all with the same dejected droop of the head. Just as we reached the camp the first horse crossed Suiattle Pass. Supper was eaten by firelight, and its merry confusion was the prelude to the jolliest camp-fire of the outing.

A lazy day in North Star Park was the morrow's program for most of us, though four of the men left us to knapsack down Railroad Creek to Lake Chelan, while two others undertook the difficult ascent of Chiwawa Mountain (8300 ft.) the southern rampart of the park. They reported it to be a very hazardous climb as the crest was composed of loose blocks of crumbling granite and the slope was very abrupt. No records were found on the summit.

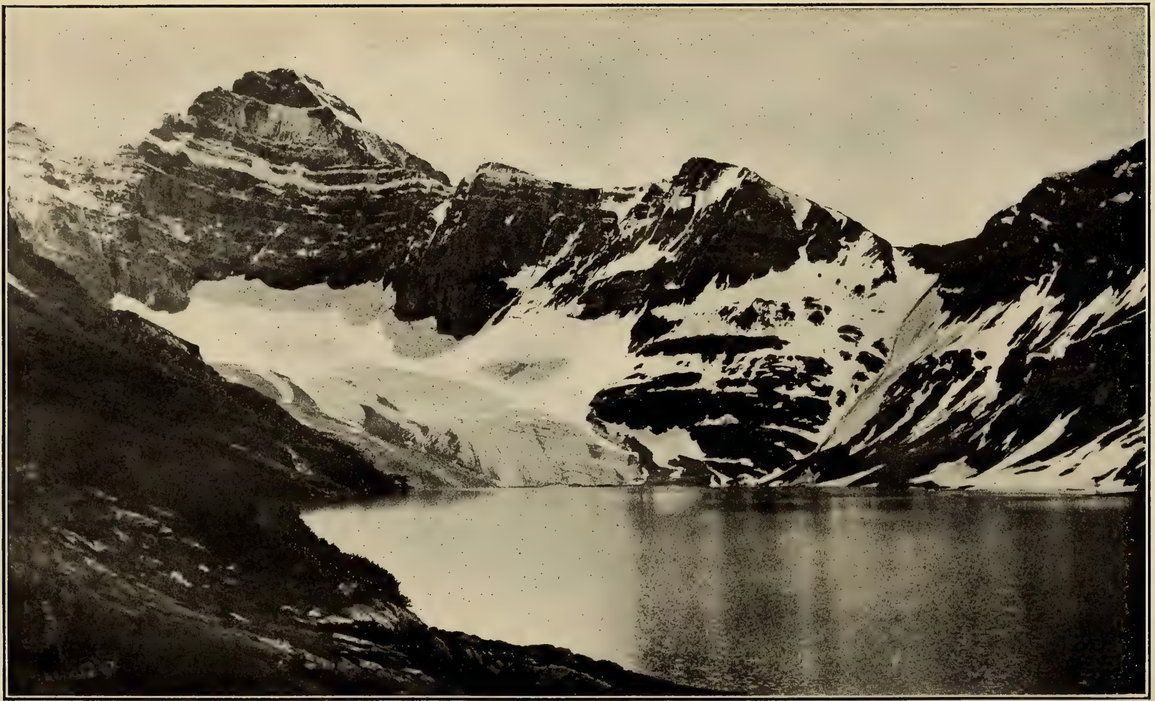
North Star Park is one of the most charming spots we visited, a wooded basin lying just below snow line and surrounded by snow-crowned mountains. Lyman Lake nearly fills the floor, though there is a margin of bright meadows starred with purple asters and blue gentians. At the southern end rises Chiwawa Mountain, its slopes almost entirely covered by the Lyman Glacier. A second lake lies at the glacier's foot, its waters cascading into Lyman Lake, 300 feet below, over a steep, heather-clad slope. Unlike most muddy glacial streams this waterfall is clear and sparkling; but here the lake seems to hold the water long enough for the silt to settle, for all along its shore we noticed a heavy deposit of fine sand among the broken rocks. We climbed out on the glacier for a short distance, but finding it deeply cut by crevasses and not knowing at what moment its rapidly melting surface might break through into a hidden cavern, we judged that without a rope it was wiser to return. From the glacier one obtains a lovely view of the park with North Star Mountain on the northern horizon and the peaks of the Agnes Creek divide appearing over the rounding summit of Cloudy Pass.

Only the homeward trail now lay before us, down Agnes Creek to the Stehekin again. The lower forests had become curiously parched and dry in the scant fortnight since we had passed through them, and an oppressive heat and ominous rusty haze hung over them telling of forest fires raging not very far away. The berries of the mountain ash were turning red; huckleberries hung ripe for the picking, and salmon berries tempted the eye, though a prevailing insipidity of taste disappointed the palate many times before the perfect berry was chanced upon. Rain caught us again at Bullion and followed us all the way down the Stehekin.

Clouds were again our portion on Lake Chelan, but this time rifts of open sky and gleams of sunshine added golden lights to the green and blue and gray of the water. Morning saw us on the Columbia once more. The long, lazy hours of boating made a lovely ending to our ramblings. We had followed the running waters down from the glaciers and snow-banks of the alpine regions where they took their rise, past mountain meadows and through deep, cool woods to the serene lake where they wound their slow course for sixty miles. And still with them we drifted down the river to the foothill country, bound like them for the busier life and narrowed horizons of the lowlands.

NORTH STAR MOUNTAIN FROM LYMAN LAKE.

NORTH STAR PARK FROM CLOUDY PASS.
Photographs by Rodney L. Glisan, 1911.



LAKE McARTHUR.
Photograph by Rodney L. Glisan, 1911.

SHERBROOKE LAKE OUTING OF THE ALPINE CLUB OF CANADA.

By Rodney L. Glisan.

The sixth annual outing of the Alpine Club of Canada was held July 26 to August 4, 1911. The camp was located above Sherbrooke Lake, in the heart of the Rockies, amid impressive scenery, and only six miles from the railroad, the most accessible place any club could have selected when scenery is considered.

I had come up the Kootenai River and Arrow Lakes to Revelstoke on the Canadian Pacific, had stopped at Glacier and Field, with side trips to Emerald Lake, Yoho Valley and Burgess Pass, had visited Lake Louise, Moraine Lake and the Valley of the Ten Peaks, and had keenly enjoyed the preliminary trip. The trains and hotels, however, were woefully overcrowded, and it was with a feeling of relief that I saw the train rush on as I stood on the station platform at Hector and leisurely looked around me. No frenzied rush to the hotel to demand, beg, and implore admission. The diminutive station-house and a water-tank composed the buildings of Hector, while the station-agent and the packers assorting dunnage bags comprised the total population. Receiving assurance that my dunnage bag would surely follow, I went over to the packers' tents on the shore of Wapta Lake nearby, where I was given a hearty welcome by several club members whom I had met on the Paradise Valley outing four years before. I was introduced to about a dozen members who had arrived by an earlier train and were eating lunch before starting for the main camp. It does not take long to get acquainted in the mountains; five minutes I knew them all; in an hour we were old friends.

Leaving Wapta Lake, we followed the trail northerly several miles to Sherbrooke Lake, a mountain lake in an amphitheater of evergreens, with mountain ranges rising high on either side. Passing the lake, we went up-stream to the meadows, where white tents, carefully placed among the pines, gave evidence of the detailed thoughtfulness of the outing committee. Reporting at the secretary's tent, I was assigned to an octagonal tent shared by three others, and soon had my sleeping-bag spread on fragrant balsam feathers. The east and west forks of Niles Creek met in the center of the meadow, and the ladies' quarters were in the pines on the east and the men's on the west fork. The meadow was close to snow-line, about two miles below the large glacier extending northerly between Niles and Daly. The timber extended a mile up the west fork and nearly two miles up the east fork. We were within easy walking distance of Daly, Niles, Ogden and other peaks, and separated from Yoho Valley by an intervening range which formed the east side of that famous valley. The camp had a deserted appearance, for nearly all were reconnoitering; but the magic sound of the dinner gong brought together seventy-five, and by the following evening one hundred and thirty had registered. Dinner was served at long tables made of poles, with log seats. The tables were protected overhead from the weather by a large canvas fly, with large flags hanging from the ridge rope, which added an effective and loyal dash of crimson to the white and green of tent and timber. A small tent nearby, ostensibly for the packers, supplied daily meals at almost any hour for anyone arriving or leaving late or early, while a committee of the ladies who preferred to remain in camp served tea and cocoa every afternoon at four. This last was a pronounced success, for nearly everyone planned to gather there to discuss the different trips, and many a weary straggler made an extra effort to come in on time. Each day's itinerary, including four or five different trips, was published on a bulletin-board and fully explained at the camp-fire the night before, prompt action being required to register, as the lists were strictly limited. The secretary's tent was the center of all information. Alpenstocks, woolen goods, goggles, Swiss nails, and other useful climbing necessities could be secured from that accommodating official. He issued all notices submitted by the climbing committee and other officials, and every one leaving camp for even an hour had to report to him, so that he might know where to send the searching party if any member failed to return. Before any climbing party left camp, its members were obliged to answer to the roll-call and were checked off the list.

Nearly every day a climb was scheduled for graduating applicants. Mt. Daly proved the most popular peak selected as a test of eligibility, for it is over ten thousand feet high and sufficiently strenuous to try the beginner's nerve. Swiss guides were furnished by the Canadian Pacific Railway Company, which properly recognizes the advertising value of the outings as a stimulant to travel. It assists the Club in every way, setting an example which similarly situated railroads could well afford to follow. The station-agent at Hector, for example, had been specially appointed by the railroad to facilitate the rapid handling of the club's supplies and dunnage.

On the graduating climb up Mt. Daly the party was limited to twenty, divided into four groups; the first led by a Swiss guide, the others by active members in the lead and rear, with the graduating members between.

As the graduating* members far exceeded the available active members, the latter were in demand and frequently called upon by the chairman of the climbing committee.

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*A graduating member of the Alpine Club of Canada is one who desires to become an active member, but who has not yet qualified. They divide their membership into five grades—honorary, active, associate, graduating and subscribing. The full definition of a graduating member is as follows: "Graduating Members—Those who desire to become active members, but who are not yet qualified. They shall be allowed to attend two annual camps, but failing qualification at the end of the second camp, their names shall be dropped from the roll of graduating members. They shall have the option of becoming either associate or subscribing members."

Being an active* member, I officiated as a rear guard on the first Daly climb. Leaving camp at 5 A. M., we went up the east fork of Niles Creek, climbed above the timber to the ledge overlooking the cañon and secured a comprehensive view southward, with Sherbrooke Lake below and the snow ranges beyond. Keeping along the slope of the main ridge, we made our way up to the rocks at the edge of the first snow-field, where we had an early lunch and enjoyed the view as we looked down on the huge glacier extended beneath us between Daly and Niles. Ascending the snow-fields, we reached the summit about noon and dropped down to the rocks just below for rest and shelter. A huge cornice or snow-cap forms the summit, projecting out in a spectacular manner beyond an almost precipitous northeast wall. The view from any of the high peaks of the Canadian Rockies is grand, and Daly was no exception. From Daly we could see the party on the summit of Niles like black ants on the snow-white crest. In descending, we changed our course westerly, going down a steep rock-strewn spur to the glacier. The Swiss guide took the main party across the glacier and down the west fork, while the chairman of the climbing committee led us down the east fork, glissading down the steep snow terraces close to Daly, separated from the glacier by a rocky spur.

The following day I led a party of six up to the glacier and Niles Pass, going up the east fork to the glacier. We slowly worked our way up the steep snow terraces, down which we had come the previous day, and made our way across the glacier, keeping well away from the precipitous front to avoid yawning cracks. Crossing the ridge which extends down from Niles, we ate lunch in a grassy basin at the head of the west fork, a point that

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*The definition of an active member is as follows: "Active Members—Those who have made an ascent of a truly alpine, glacier-hung peak rising at least two thousand five hundred feet (2,500 feet) above the timber-line of its region; their eligibility for election to be decided by the Executive Board." At each outing certain peak or peaks are selected and if the graduating member succeeds in making the summit of one of the approved peaks, he becomes eligible for election as an active member.

NILES-DALY GLACIER, ABOVE YOHO VALLEY.

WIWAXY FROM LAKE O'HARA.
Photographs by Rodney L. Glisan, 1911.

VICTORIA AND LEFROY FROM POPE'S PEAK.

CATHEDRAL REFLECTED IN SHERBROOK LAKE.
Photographs by Rodney L. Glisan, 1911.

opened an attractive vista down the cañon. Following down the stream by waterfalls and cascades, we kept on to camp, trailing for the last two miles through a natural park of alpine evergreens.

Early the following morning, by request of the climbing committee, I endeavored to lead a party of eleven up Niles Peak. We went up the west fork, skirted the southwest slope of Niles to the skyline ridge, in accordance with directions secured from one of the Swiss guides, and made our way up the ridge. Thence we followed the trail up the steep snow and loose rock which had been made by the Swiss guide who had taken the previous day's party. After climbing well up on the ridge, it was impossible to miss the route, as sheer walls of rock on the north dropped to the glacier below, while steep snow-fields sloped to the south from the ridge on which we were standing. A snow cornice formed the summit, which was reached in four hours from camp—almost record time. The view was far superior to that obtained from Daly, although the two summits are not over five miles apart in an air line, and Niles is not quite so high. We had a perfect view of Daly, could see the Daly party leaving the glacier below, could follow the glacier through its entire length, could see the downward slope westerly where Takakkaw Falls leap out from the ice and drop nineteen hundred feet to the floor of Yoho Valley. The falls were not visible, as we were some distance back. We secured a comprehensive view of the opposite side of Yoho Valley, could see Emerald Lake to the southwest, while to the south Victoria, Cathedral, and other prominent snow peaks were brought out in strong relief by a band of clear, almost vivid light, which extended from the horizon to a canopy of dark clouds just above the range. It seemed as though a broad curtain had been partially rolled up to disclose the wonderful panorama. The threatening storm made us somewhat uneasy, so we left the summit and coasted down several steep snow-slopes, an adventure in which alpenstocks proved far better rudders than the shorter ice-axes. As we reached the grassy basin below, the sky cleared, the sun burst forth, and the walk down the cañon was most enjoyable. Camp had hardly been reached, however, when the clouds gathered again, and a thunder-shower drove us to shelter for a brief interval.

I was fortunate to be included in a selected party of eight, as a representative from the Mazamas, with a representative from the Appalachians and Mountaineers, to make the climb of Pope's Peak. We left camp one afternoon on the trail to Hector, went east a short distance along the railroad, thence southerly through the timber to Ross Lake. This is a small lake with trees half encircling the lower shore, while the upper end curves deep into high rocky walls from which a waterfall pours. We arrived in time to see the evening glow reflected in the lake. Several tents had been pitched, with an assistant in charge, who had prepared hot supper while we secured some boughs for bedding. This precaution was necessary, since the mossy shore was kept damp by percolating springs. The mosquitoes threatened to become a pest, but the fire kept them back, and by the time we turned in, the cold night air had effectually disposed of them. Early the next morning we started from camp in two parties of four each and two Swiss guides. The route was most deceiving. Pointing to a dark line or crack half-way up the wall above us, our guide stated we would have to climb up and follow the line to the cleft in the wall at the head of the falls. It looked difficult to make the ledge, for such it proved to be, and impossible to follow it; but the guides unhesitatingly worked their way up to the ledge, which we found wide enough for fairly easy passage, and we soon were in the hanging valley above the falls. Here we found a glacier sloping down from Pope's Peak, and ascending, we reached a rocky ledge jutting out on the left side of the glacier, where we roped together. Avoiding several crevasses, crossing one on an ice bridge, we reached the saddle above the glacier. Again the guides pointed to a forbidding wall in front, an apparent barrier between us and the summit beyond. Deceived by the first wall, we belittled the second, which we found far more difficult. Climbing up a short snow slope so steep that one almost tipped backwards, often dropping into the back track in making the next step forward, sinking at times to the hips in the loosely packed, curiously porous snow, we felt relieved on reaching the rock. Here the guide, like a mountain goat, went along a narrow ledge with a slight uplift, reversed first one way and then the other, confidently turned when there seemed no way to turn, and worked up an open chimney here and there, dislodging quantities of loose rock, the accumulation of many years. By waiting for one party to pass a point before proceeding to the point above, we finally made the snow and again varied our experience. Here the snow rose sharply in front, sloped almost sheer to the right, and slightly overhung on the left, with a faintly defined, irregular crack denoting an early breaking away of the overhang. It was straight up, turning neither right nor left, to the summit, and here we met our reward.

No more stupendous or spectacular scene could be conceived. Just across the chasm rose the giant bulk of Victoria, with sheer walls of ice; to the left Lefroy, hardly less impressive, with Abbott Pass and the Death Trap between; while in the distance rose Temple, a majestic mass. Turning back again and swinging away from Victoria, to the right we could dimly see Cathedral enveloped in banks of clouds, sun and shadow emphasizing every curve; indeed, everything was curved, for nature here was one vast upheaval. We were on the grand continental divide—"The Roof of the World." Here streams, starting from almost the same source, flowed different ways, finding their goal eventually in three different oceans. An hour of sunshine on the summit and a descent in a snowstorm ended an impressive day.

One more side trip to illustrate the attractive variety offered on the outing. Leaving main camp after an early supper, a party of four again took the Hector trail. On the trail near Sherbrooke Lake they met a bear. Our sleeping-bags had been taken down that afternoon, and we had hardly placed them in the spare tent near Wapta Lake, when a wind arose and a thunderstorm broke, driving every mosquito away and us into the tent. Thence we comfortably watched the tent illuminated by lightning flashes and viewed fantastic shadows thrown on the canvas by the powerful headlight of some huge engine as it rounded the curve close by with its burden of transcontinental freight. We rose with the sun and after a hasty breakfast started forth in the thunder-cleared air up Cataract Creek to Lake O'Hara. This lake is several miles long and completely encircled by snow peaks. Wiwaxy with its curiously turreted sides suggests feudal castles, one above another. Leaving O'Hara, we kept on to Lake McArthur, which occupies a royal place with two guardian peaks nearby and a glacier sloping to the water's edge. Miniature icebergs float in the wonderful blue, mountain goats dislodge rocks far above, ptarmigan call their dainty chicks from hiding-places in the white-belled heather, diminutive arctic rabbits bounce here and there among the mountain daisies, and marmots test the echoes with their shrill whistle. This lake is the gem of all.

We tramped twenty-five miles before we reached main camp again. But it was a day well spent and never to be forgotten. At the campfire in the evening we listened to good addresses, songs and stories, and heard how the porcupine had chewed shoes and camera cases, invaded the ladies' quarters, and had driven some of the timid ones from their tents. All too soon the outing ended and everyone turned reluctantly homeward.

THE GOLDEN TROUT OF COTTONWOOD LAKES.

By Fred Koch.

The snow was still on the ground when we got there, young Dutcher and I, with our pack trains, and as the sun was going down, we unloaded the mules, and picked out a little clear spot on the edge of the meadow, where we built a fire, hoping to dry off a small space before turning in for the night. June sixteenth seemed pretty late in the season to us when we left the desert with its temperature of over a hundred in the shade, but it seemed very early when we emerged from the scant yellow pine belt and plunged into the tamaracks ten thousand feet above sea level. The ascent had been sudden, for we had climbed along the precipitous sides of the great fault of the eastern slope of the Sierra, ascending in one place three thousand feet in less than three miles. At ten thousand five hunded feet, the shady nooks were still covered with snow, while far above us we could see the precipitous cliffs with great snow banks at their feet.

We comprised one section of the Death Valley expedition, which in 1891 spent half a year hunting and trapping in the heart of the desert, and now the two of us were to spend three months studying the birds and mammals of the High Sierra, and with our barometers and other instruments make meteorological observations at an altitude of over ten thousand feet.

At Lone Pine, at the eastern base of the mountain, people hinted at the wonderful trout we would find in Cottonwood and Volcano Creeks, and described them in a manner fit to make our mouths water; so we were a happy pair of youngsters, when, a little after noon, we poked our heads through the clouds, as it were, and crossing the first bridge, started to clamber down the

Devil's Ladder, as the packers called it, to the Little Cottonwood at its foot. This is the steepest place along the Hockett Trail, and it certainly warrants the name, for it seemed more like riding down a spiral staircase than anything else.

After a mile or more of gradual climb along the course of the Little Cottonwood, we turned sharply to the left and followed an indistinct blazed trail until it pitched down to the crossing of the Big Cottonwood. Two miles above the crossing close to the bank, we stopped and prepared the place which we were to call a temporary home for the next three months. We were at the edge of a ten acre mountain meadow, and our first night was spent within a rod of a big snow bank.

We were astir early the next morning. While the mush was cooking, I located some likely looking pools in which the trout were darting to and fro, jumping at the bits of floating sticks and chips which I threw in. I must confess that on this occasion it was not the prospective sport that lured me from the camp fire, but the chance to fill a pan with crisp brown trout, and for once give us a change from the everlasting salt-horse and sow-belly which had been our regular fare for the past three months.

It was very hard to have to arrange camp, and get things settled generally, before starting out to try for the trout. But it had to be done, and it was not until nearly the end of the afternoon that I cut my willow pole, fastened a few yards of shoe thread to it, and baited my hook with some bluebottle flies that we found spending the lunch hour on an opened can of corned beef.

Just beside our camp the water swirled under a great pine log and fell with a roar to a pool beneath, covering the surface with foam and digging out the overhanging bank. The water was so very turbulent that I thought it unnecessary to take the usual precautions to keep out of sight, so I stood on the edge of the bank, and threw my hook above the falls, letting it drift over to the pool.

My line had no sooner fallen in the whirling foam beneath the falls when from all sides dark streaks seemed to rush toward it, and in a twinkling it was swishing through the water. I did not play him, nor did I let him play with me. The vision of the sputtering frying pan and the browning fish was before me, and with a heave ho! such as one uses to pull out a sucker or a carp, I yanked him up on the bank behind me. He was not very big, perhap ten inches long, but oh, the colors! They were too brilliant to seem natural. From head to tail a broad scarlet stripe stretched, interrupted here and there by blotches of brown; beneath, a beautiful canary yellow merging to orange, while the tips of both tail and fins were white, and faintly discernable, as though washed over by the other colors, were scores of speckles. The tail, heavily spotted, was large and gave the impression of power, while voracity was evident in the big jaws armed with sharp teeth.

It was not until a year or two later that Dr. Jordan got hold of one and named it *Salmo mykiss aqua-bonita* —surely a beautiful trout of beautiful waters.

But aside from its scientific baptism it had been known as the Golden trout for years by the few people who had seen it and the many who had heard of it.

After the first it was easy. Any day one could go but a few yards from the camp and catch all that were needed, no matter how large the family to be fed.

The largest fish were found in the riffles, while any size from six to ten inches could be found in almost any hole. In fact I never saw trout so plentiful, and with the crude appliances at hand I had no trouble in landing ten in fifteen minutes one day when I chose to time the operation. The largest fish measured just eleven and a quarter inches in length, and the next year on reporting this to the fish commission I was told that this was the largest on record. Cottonwood Creek is almost free from brush and with the trout as unused to man as they were, the fishing was ideal.

Some weeks later I had to go several miles up stream to set my traps, and was delighted to discover a great chain of Alpine lakes feeding the creek. In fact, after exploring the west branch of Cottonwood we counted a total of twenty-one lakes feeding the stream. But there were no trout in them at all; in fact, none above a series of falls aggregating some fifty feet, which tumbled over the rocks below.

From some stockmen whom I found riding the range, I learned that the trout found in Cottonwood Creek are not indigenous to the stream, but had been brought there some fifteen years before by some sheep men who had found them in Mulkey Creek, a small tributary of the Kern River, just across the divide, some ten miles to the south of our camp. But a baker's dozen were taken from Mulkey to Cottonwood in an old coffee pot, but there seem to have been sufficient, as the latter creek, at the time of our visit, was fairly swarming with them. However, they were not at all plentiful in the lower courses of the stream below the crossing of the Hockett trail, where it is said the first were planted.

Mulkey Creek, from which the trout were taken, drains towards the east, while Cottonwood is lost in the desert, or, at highwater, reaches Owens Lake after a series of great falls down the eastern escarpment of the Sierra. In the course of its meanderings the South Fork of the Kern River, a few miles above its junction with Mulkey Creek, comes within a few yards of Volcano Creek, in which are found a slightly different form of Golden trout, and it is easy to believe that at some time a transfer has been made at this point and the variation in species began.

The Volcano Creek trout has been named *Salmo roosevelti* by Mr. Evermann in honor of President Roosevelt. It differs from the Whitney and Mulkey Creek specimen in that it has a deeper golden color, and the distribution of speckles is not the same. Neither of these species reaches a great length in the streams, but as will be seen later grow to a large size in the Alpine lakes higher up.

On one occasion, Mr. James Moffit, a cattle man of Lone Pine, whose camp was at Mulkey Meadows, suggested that we try to stock the lakes with trout, and to this I readily acquiesced. I told him of a small tributary of the main creek which I had discovered, up which many of the trout had found their way—probably to spawn.

Accordingly the next week, together with two men who were with him, we diverted the little brook, and soon had the fish where they could be easily caught, isolated in the little pools. We had only a half dozen lard pails in which to put our catch, and these were soon filled, about fifty fish being caught, mostly with our hands or by washing them out on the bank. The horses were waiting, and as soon as the pails were filled we mounted and dashed off through the woods, now and then returning to the nearest bend in the stream to change water. Had we realized that what the fish needed was fresh air, and not fresh water, we would probably have reached the lakes with more than twenty fish alive; for with the rough riding and the consequent slapping around of the water, it certainly would have been aerated sufficiently to keep them from dying.

As it was, we reached the lakes an hour later, with twenty-one battered trout, and carefully placed them in the water. Even these were far from frisky, and I doubt not that many of them died later.

These lakes, most of them above the timber line, are fed by the melting snows lying at the base of the cliffs above them. The shores are grassy and gravelly, with little brush, making fishing easy—a portable boat would be just the thing, as there are no snags.

Such, briefly, was the history of the stocking of the Cottonwood Lakes. A month later we left, for the snow was already beginning to whiten the ground, as early as the middle of September.

But in the fourteen years following, I never forgot the trip and often longed to get back and test the success of our venture.

In 1904, Mr. Jenkins, whom I met in Berkeley, told me he had just returned from Lone Pine, and that he heard reports that big fish had been seen in the Lakes. In 1905 the Bulletin of the Bureau of Fisheries was issued with an article by B. W. Evermann on the "Golden Trout of the High Sierra," in which a fairly complete account is given of the stocking of the Lakes fourteen years before. Here the statement is made that fish of over five pounds' weight are now caught in the lakes. It goes to show that all a trout needs to increase in size is more space in which to grow and plenty of food. During the summer innumerable caddis worms are to be found along the bottom of the creek, and these themselves furnish a bait that can scarcely be improved on. I am sure that artificial flies will prove a success, as we often used the ventral fin of a fish, which, when spread on the hook, looks much like a gaily colored fly or a butterfly. In fact, we frequently could make a good catch with but a couple of bluebottle flies or a beetle to start with, and the use of the fins after the start was made.

There are two ways to reach Cottonwood Creek, either from the West, where one may start from Visalia, and follow the Kaweah River up to its South fork, and along this until one reaches the end of the road some forty miles from the railroad. Here at Camp I, as shown on Le Conte's map, one takes the Hockett trail and following it, has opportunities en route to fish in the Kaweah and Kern Rivers and to try for the big fellows in Kern Lake a mile below the river crossing; thence the route is up the tributary called Volcano Creek, where the brilliant Golden trout, named *Salmo roosevelti* by Mr. Evermann, is found; then across the divide to Mulkey Meadows, from which the waters drain to the East. All of these streams contain the different forms of Golden trout. A little beyond, one reaches Cottonwood Creek. Following this and keeping to the right-hand branch, one may easily reach the lakes. I am told that our old log cabin still stands at the edge of the meadow about two miles above the trails crossing, though the thatched roof must long ago have disappeared. The surrounding tamarack forests abound in grouse and tree squirrels and a little lower down bands of quail were found.

But to me, the more attractive route, which entails less packing, is from the little town of Lone Pine on the East, which still shows the effects of the terrible earthquake of the early '70s which shook down many of the adobe houses in the little village.

A mile to the East is the big earthquake crack, a hundred yards across and nearly twenty feet deep. A little cemetery on the north end of the town contains thirteen graves, said to be those of victims of the quake.

Lone Pine is reached from Whitney Station, a couple of miles away on the Carson and Colorado Railroad, and is a good outfitting point, though provisions are expensive as the freight rates on the little railroad are high. But pack animals are plentiful and the trip is but a day's journey, while the view, as one passes from the desert to the pines in less than five miles, is simply wonderful. As one climbs the steep trail, range after range appears to the east, each a little dimmer than the preceding one, until finally the panorama shows the Cosos, the Angus range and the Panamints, one behind the other, the latter being the eastern boundary of Death Valley, seventy miles away. And if one chances to be on the first crest late in the afternoon when the shadows begin to steal out from the base of the mountain, the vastness of the desert makes an indelible impression on the mind, as the black cloak moves faster and faster toward the East, finally swallowing up each successive range until none but the highest peaks—perhaps snow-capped, gleam like beacons across the waste and one realizes that no matter which way one turns it will take quick work to reach a camp before darkness settles down.

A PLEA FOR THE CONSERVATION OF WILD FLOWERS.

By George T. Ruddock.

The newspapers of April 21, 1911, displayed an item on activities of the teachers and children of the Oakland public schools in stripping the hills and forests of Alameda County of wild flowers. The children's department of the public library building was used to exhibit the flowers taken, the public was invited to inspect, and, doubtless, expected to approve and applaud. The publications detailed the localities allotted to the several schools and impressed the idea of competition in quantities to be gathered.

It may have been the purpose of the initiators of the outing to make it educational. Then why the reserved space for exhibition? A few specimens of each kind collected in the fields and properly presented by the teacher would have been effective. Wild flowers do not make an attractive indoor display and any technical arrangement would be very uninteresting to the visiting public.

Such an outing always resolves itself into competitive vandalism—without design perhaps, but with that inevitable result. Field flowers cautiously plucked may serve for exhibition or decorative purposes; but few persons are temperate enough in their desires, or sufficiently thoughtful to pick them with the best effect and least violence to the fields.

The æsthetic duty of wild flowers is to adorn the fields; their especial mission is to produce seed to perpetuate the species and, coincidentally, to furnish food for other life forms. To destroy the seeding capacity is to end the life history of the plant in the locality. Wild flowers propagate mostly by seed; in order to insure reproduction they bear these in large quantities, but with a low percentage of germination. These few fertile seeds must escape destruction by fire, birds, rodents, insects and grazing animals before new plants can be produced to struggle on to flowering maturity. All of these deterrents are normal; when the human element of destructiveness is added, the end is in sight.

Cultivated plants have the advantage of protection, care, and assistance. They are gathered more sanely and no such destructive manner of picking would be tolerated by the enthusiasts who pluck up wholly immature plants in the field. As stated, the æsthetic duty of wild flowers is to attract—in the fields; there they should be enjoyed and allowed to remain for the enjoyment of others. They do not serve as "cut" flowers nor lend themselves to interior decoration, since they wilt quickly and are individually small. Their principal effect and glory is in masses with the landscape as a setting. To gather them is to waste.

A few years ago the hills, seen from any point on the bay, were gorgeous beyond description in their spring coloring of blue, gold and red; now, with the exception of rare patches, there is nothing but monotonous green quickly changing to the summer browns. Real estate dealers and transportation companies, instead of conserving the beauties of the recurring seasons, invite patrons to "come and gather wild flowers"; the invitation is, seemingly, interpreted as a command to uproot everything in sight.

We at home are slow to see or appreciate the damage done; good observers, from without, see and have given warning. In February, 1910, Caspar Whitney wrote as follows in *Collier's Weekly:*—

"Fifteen years ago California had acres upon acres of those beautiful flower things, the wild poppy, commonly found only in that other sunny land, Italy. Even ten years ago great golden fields of these exquisites of the open plenteously adorned the southern half of the State. Then tourists began pulling them up by the armful—by the roots. Not with the wish to elsewhere establish poppy loveliness through transplanting, did these vandals uproot this jewel of wild flowerdom, but only to feed that coarse passion which delights in destroying flowers, killing birds, and marring roadside signs. So ravaged are those once joyously laden fields that now one must actually seek them, as one looks for the big trees, in certain sequestered spots.

"California should enact a law protecting its remaining poppies, because to get a sight of those golden fields has taken many a traveler to the Coast; and California's natural beauties are assets which the Californians will be wise in safeguarding against foreign vandalism and native gluttony.

"Unhappily, California's despoiled fields offer only another grievous example of the pillage of wild-flower plunderers throughout our land. The rich cardinal flower, once to be found over all New England, has become a rarity; the State flower of Minnesota—the moccasin plant, formerly so abundant—grows now only in localities remote from settlements.

"And the destruction of these beautifiers of our work-a-day world is so wanton! It isn't so much what is taken as it is what is killed in the getting. It isn't enough that the marauders must pull up the flowers by the roots, but they trample into the earth and kill those of the immediate vicinity. And nine times out of ten one half of the blossoms gathered are thrown away!

"Give the wild flowers a chance for their lives, I beseech, if not because they make the fields inviting and bring cheer even into the sordid perspective—I had nearly written soul; fancy a vandal with a soul!—then for the material business reason that, like the birds and the animals of field and forest, they profit you and your dollar-making community more in life than in death.

"Pick wild flowers, as many as you can really use—they'll put joy in your heart; but *pick* them, don't yank them up by the roots, and don't tread down all the others near those you pluck. Pick your footsteps as well as your flowers, sparingly and carefully. Then go your way, rejoiced by the thought that another may find the sought-for cheer in those you have left living."

If the children be trained in this department of nature study, let it be done in the fields. Instead of one trip of destruction, let many be made to study the flowers, their environment and purposes; and, at appropriate times to gather and distribute seeds to assist in the conservation of the plants in their unmatchable beauty as intended by nature.

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The purposes of the Club are:—"To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada Mountains."

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EDITORIALS.

Bureau of National Parks. The Sixty-second Congress is likely to mark a new era in the management of our national parks. A bill calling for the establishment of a Bureau of National Parks in the Department of the Interior was introduced in the Senate by Mr. Smoot and has been referred to the Committee on Public Lands. Details regarding this new administrative project will be found in the Notes and Correspondence. It is pleasant to be able to record the fact that the urgent need of such a bureau, already recognized by former Secretary Ballinger, was brought out effectively by the action of Secretary Fisher in calling a National Park Conference last autumn in the Yellowstone National Park. On this occasion the various superintendents of the national parks, Chief Forester Graves, Chief Geographer Marshall, J. Horace McFarland, President of the American Civic Association, and various railroad officials were among those in attendance. The great diversity of administration, the lack of a uniform policy of improvement, the inequitable apportionment of funds for maintenance, and the failure to conduct improvements under the advice of expert landscape engineers, were seen to be strong reasons for establishing a central bureau that shall take charge of all national parks, monuments and reservations. The Sierra Club, through its officers, began some time ago to urge the establishment of such a bureau, and hopes for the early adoption of this administrative measure.

Our New Director. Professor Vernon L. Kellogg of Stanford University was recently elected a Director of the Sierra Club to fill the vacancy created by the resignation of Professor E. C. Franklin. Professor Kellogg has for many years been active in work connected with the Sierra Club, and his election is in line with the policy of the Club of having at least one representative on the Board, from Stanford University. Professor Franklin is carrying on advance research in his specialty in the government laboratories in Washington, D. C. We regret his departure from California, which we trust will be only temporary, and wish to extend to him the sincere thanks of the Club for his generous assistance while on the Board of Directors.

THE RECESSION BOOMERANG. Among the comedies enacted on the floor of the last California Legislature was an attempt to pass a resolution asking for the recession of Yosemite National Park to the State of California. The reason alleged was neglect of the valley by the Federal administration. In a circular sent to members of the Legislature by the Secretary of the Sierra Club, he had little difficulty in showing that the annual appropriations by the Federal Government have averaged $40,400 a year for the past five years, considerably more than twice the amount appropriated yearly by the State before recession in 1905. Acting upon Mr. Colby's suggestion that Congress be memorialized to appropriate $1,000,000 in four annual installments of $250,000 for the improvement of Yosemite National Park, in anticipation of the World's Fair in 1915, Mr. Wm. C. Clark introduced a joint resolution to this effect and it was duly passed. We hope that our Senators and Representatives in Congress will spare no effort to secure this appropriation and thus set on foot a comprehensive plan of improvement. As compared with Yellowstone National Park, Yosemite has never received its proportionate share of appropriations.

THE HETCH HETCHY SITUATION. At the request of the San Francisco authorities, the final hearing and submission of the report of the Advisory Board of Army Engineers has been postponed again, this time until the first of March, 1912. At the last hearing in May, 1910, the Secretary of the Interior, in reply to a question from City Attorney Long, regarding the scope of the investigation, said "the question the Government wants to know and the question the American people want to know is whether it is a matter of absolute necessity for the people of that city to have this source of water supply; otherwise it belongs to the people for the purpose for which it has been set aside." The city's representatives at that time were directed to make a careful investigation of "all other sources of water supply available" to the city and to report the progress of their investigation to the Board of Army Engineers. The latter board was authorized at the same time to make its own examination in order to arrive at "a full and complete determination of the matters committed to it." This is what the directors of the Club have all along insisted should be done. The report of the Board will be awaited with great interest.

PROPOSED EXTENSION OF SEQUOIA NATIONAL PARK. For many years it has seemed wise to extend the boundaries of the Sequoia National Park to include the headwaters of the Middle and South Forks of the Kings River and the Kern as well. It has also been suggested that Evolution Basin at the headwaters of the South Fork of the San Joaquin should be added. This region embraces the famous Kings and Kern River Cañons, Tehipite and Paradise Valleys, the highest and most rugged portions of the crest of the Sierra extending from beyond the Palisades (over 14,000 feet) on the north to Mt. Whitney (14,501 feet) on the south, wonderfully beautiful lakes, cliff and cañon scenery, and also Golden Trout Creek, the only stream in the world where the Roosevelti variety of trout are native. This region has very little commercial forest, is not suitable for residence or agricultural purposes and its main value to the nation lies in its wonderful park-like character, which is annually attracting increasing numbers of campers and tourists. Except for a few grazing areas, on which stock can still be allowed to feed under permit, there is little reason why the inevitable should not take place now instead of later on, and the Park be enlarged to include this area.

The area is now included in National Forests, but the main reason for the change is that the Forest Service funds are not adequate to open up the region with much needed new trails, not to mention repair of the old.

Under park administration considerable sums of money would be spent on these improvements. Each year as the Club has visited the Kings and Kern High Sierra regions, it has found the trails in worse condition. This is not any reflection on the Forest Service. Its main interest lies lower down the slope of the range where the commercial forests and greater danger from fire exist. It has done splendid work, but is handicapped by lack of funds. We urge our members to aid in having the Kings-Kern area brought under Park administration so that the region may be opened up for the increasing numbers of persons desiring to visit its wonderful attractions.

REPORTS OF COMMITTEES.

REPORT OF COMMITTEE ON 1911 OUTING.

The 1911 Outing of the Sierra Club was the most ambitious outing yet undertaken and in many ways the most successful. There were 185 regular members of the party, and counting assistants and help, the total party numbered about 220. There were thirty-six members who came from outside the State, mainly from the vicinity of Boston and Chicago. The number of the party was strictly limited, as has been the custom in the past, and unfortunately we had to refuse fifty or more applicants who wished to join after the list was complete. After a preliminary camp of two weeks in Yosemite Valley, which was taken advantage of by many who went on the main outing as well as other members of the Club, the party started into the High Sierra, camping in the Little Yosemite and also at Lake Merced. After spending a few days in Tuolumne Meadows the entire party moved to the mouth of Conness Creek, at the head of the Grand Cañon of the Tuolumne, and thence to Matterhorn Cañon, Rogers and Benson Lakes, Kerrick Cañon, and finally reached Tilden Lake in the very northern portion of the Yosemite National Park, a region as yet little visited, but one of the most attractive portions of the park, with its wonderful lakes, peaks, forests, cañons and meadows. The party returned to El Portal from the Hetch Hetchy Valley, which was reached via Rancheria Mountain. From this latter point, near which we camped one night, we obtained the stupendous view across and up the Tuolumne Cañon, one of the finest in the whole Sierra. It was no slight undertaking to transport provisions and baggage by pack-train for such a large party on a circuit of approximately 150 miles, during which the main camp was moved fourteen times. No serious mishap occurred on the entire trip. Plans for the 1912 Outing to the Kern River are well under way and the party will be taken into portions of the Sierra in the vicinity of the Kings-Kern divide, such as the Milestone, Thunder and Table Mountains, which have seldom been visited before. Everyone qualified will have an opportunity to climb Mt. Whitney (14,501 feet). The trout planted by the Club in 1908 have grown to very large size and the fishing will be superior to any we have ever enjoyed. To be able to catch golden trout twenty inches in length will be an experience not soon forgotten.

Respectfully submitted,
WM. E. COLBY, *Chairman,*
J. N. LE CONTE,
E. T. PARSONS,
Outing Committee.

SMEDBERG LAKE, YOSEMITE NATIONAL PARK. VISITED BY THE SIERRA CLUB IN 1911.
Photograph by Mabel Sykes.

MATTERHORN CAÑON, YOSEMITE NATIONAL PARK.
Photograph by Dr. Edward Gray.

BENSON LAKE, YOSEMITE NATIONAL PARK.
Photograph by R. R. Lawrence.

SOUTHERN CALIFORNIA SECTION OF THE SIERRA CLUB.

In response to an invitation sent to Sierra Club members in the immediate vicinity of Los Angeles, nearly fifty gathered in the Knickerbocker Club rooms on South Hill Street in that city, on the evening of November 1, 1911. These enthusiastically became the nucleus of a Southern California Section of the Sierra Club, adopted the by-laws of the parent organization, chose a governing body of nine to be known as the Executive Committee, and declared in favor of holding regular Local Outings.

The following were elected members of the Executive Committee to hold office for one year from October 1, 1911, or until the election of their successors: Messrs. Clair S. Tappaan, W. M. Caswell, Everett Shepardson, H. E. Bailey, Wm. P. Boland, P. S. Bernays, the Misses E. Page Kern, W. Van Hagen and A. M. Walker.

The Executive Committee met on Tuesday evening, November 7th. The election of officers resulted in the selection of Clair S. Tappaan, as Chairman; W. M. Caswell, as Fiscal Agent, and P. S. Bernays, as Recorder. It was resolved that the Executive Committee should be constituted a Committee of the Whole for the conduct of Local Excursions.

In accordance with the by-laws of the Sierra Club only Sierra Club members are eligible to belong to the Southern Section. The dues for membership in the Southern Section were fixed at $2.00 per year payable six months in advance.

Future elections will be participated in by the membership at large in Southern California by ballot. The sole object of issuing the call for the first meeting to members within a limited district was to insure immediate action and facilitate organization.

Hereafter all communications will be mailed to the Southern California membership who affiliate with the Southern Section.

It is hoped that all members of the Sierra Club in Southern California will join the Southern Section and thus assure its success. Kindly sign and return the enclosed application for membership in the Southern California Section.

MISS E. PAGE KERN,
MISS W. VAN HAGEN,
MISS A. M. WALKER,
WM. P. BOLAND,

W. M. CASWELL,
P. S. BERNAYS,
EVERETT SHEPARDSON,
H. E. BAILEY,
CLAIR S. TAPPAAN, *Chairman,*

Executive Committee of Southern California Section of Sierra Club.

[We are glad to note the active formation of this section. It has already undertaken several successful walks and excursions, in which a large number have participated.—THE EDITORS.]

REPORT OF THE LE CONTE MEMORIAL LODGE COMMITTEE, SEASON OF 1911.

The importance of the work done in maintaining the Lodge is emphasized more strongly than ever by the activities of the season of 1911, as detailed in the following report of the Custodian:

"To the Le Conte Memorial Lodge Committee:

"The Le Conte Memorial Lodge in Yosemite Valley opened for the season of 1911 on May 18th, and closed August 13th. Two thousand nine hundred and ninety-seven names were on the register, which comprised only about one-half of the visitors, thus making a total of nearly six thousand who resorted to the Lodge. The books in the library were in constant use, and much interest in the Club and its work was always manifested, especially with reference to the Hetch Hetchy Valley. Many were surprised to discover it was so near, and exclaimed at the pictures being so similar to the Yosemite.

"There were many inquiries for a photograph of John Muir, which is lacking in the Lodge. The herbarium collection was added to from time to time, through the kindness of several visitors who proved to be botanists of note. In fact, the Lodge was made the headquarters of many who were interested in the flora and silva of the valley, and who came again and again to compare their specimens with those in the collections and to consult the botanies in the library. The Sierra Club is greatly indebted to Professor W. L. Jepson for the gift of his valuable works, the 'Silva of California' and the 'Flora of Western Middle California.' They were the two books most in demand. The custodian continued the work of mounting specimens in the celluloid envelopes and replaced some which had faded in the herbarium holder.

"There arrived early in July a handsome oak desk, which was made possible by the kindness of Mr. Charles Kellogg, who had donated the receipts from a lecture (the year previous) for the above purpose. Some small oak tables would add still more to the attractiveness of the interior, as those in present use are very rickety and of cheap wood.

"Major Forsyth notified the custodian that the work of piping water to the Lodge had been begun. At the time of closing the trenches for the piping had already reached to the rear of the edifice. The thanks of the Club and the custodian are due to Major Forsyth for his courtesy and kindness. Mr. and Mrs. David Curry and their secretary, Miss Marie Ervine, also did much to help the custodian in the discharge of her duties.

"Mrs. Sissons left five dollars to buy books 'because of the pleasure derived from the Lodge.' The money was invested in Dr. C. Hart Merriam's 'Dawn of the World' (Indian legends), Sienkiewicz's 'With Fire and Sword' and O. Henry's 'The Trimmed Lamp.'

"The following donations were received for the library:

CONE-BEARING TREES OF THE CALIFORNIA MOUNTAINS
. . By *J. Smeaton Chase.* Compliments of A. C. McClurg & Co.
PUBLIC HEALTH . . . .
. . Weekly bulletins sent by the California State Board of Health
CANADIAN RECIPROCITY . . . .
. . . Message of the President. Send by Hon. John E. Raker
PERMISSIBLE EXPLOSIVES . . . .
. . . . . By *Clarence Hall,* Department of the Interior
FOREST TREES OF THE PACIFIC SLOPE . . . .
By *George B. Sudworth,* U. S. Department of Agriculture, Forest Service
AN EXCURSION TO THE YOSEMITE . . . . .
. . By *E. C. Andrews,* Department of Mines, Sydney, Australia
A SUMMER IN THE SIERRA . . . By *William Frederic Badè*
REMEDIES AND PREVENTATIVES AGAINST MOSQUITOES .
. . . . By *L. O. Howard*
EVOLUTION . . . .
. By *Dr. Le Conte.* Presented by Miss Elizabeth Metcalf of Buffalo
SIERRA CLUB BULLETIN, Vol. VII.
SIERRA CLUB BULLETIN, Index Vol. VII.

Anita Gompertz, *Custodian.*"

It is much desired that contributions of money for that purpose may enable the committee to provide for the coming season the small tables to match the chairs presented by Mr. James Mills, and that books treating of the birds, plants and trees of the region be donated to the library.

It has also been suggested that the photographers who were on the last Yosemite Outing present albums of their best prints to the Lodge library. Only in this way can visitors, unable to see the entire park, gain any adequate idea of its outlying magnificence and grandeur. Respectfully submitted,

Lydia Atterbury,
J. N. Le Conte,
E. T. Parsons, Chairman,
Le Conte Memorial Lodge Committee.

NOTES AND CORRESPONDENCE.

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comments and suggestions on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, fish, forests, trails, geology, botany, etc., of the mountains, will be acceptable.

The office of the Sierra Club is Room 402 Mills Building, San Francisco, where all Club members are welcome, and where all the maps, photographs, and other records of the Club are kept.

The Club would like to secure additional copies of those numbers of the SIERRA CLUB BULLETIN *which are noted on the back of the cover of this number as being out of print, and we hope any member having extra copies will send them to the Secretary.*

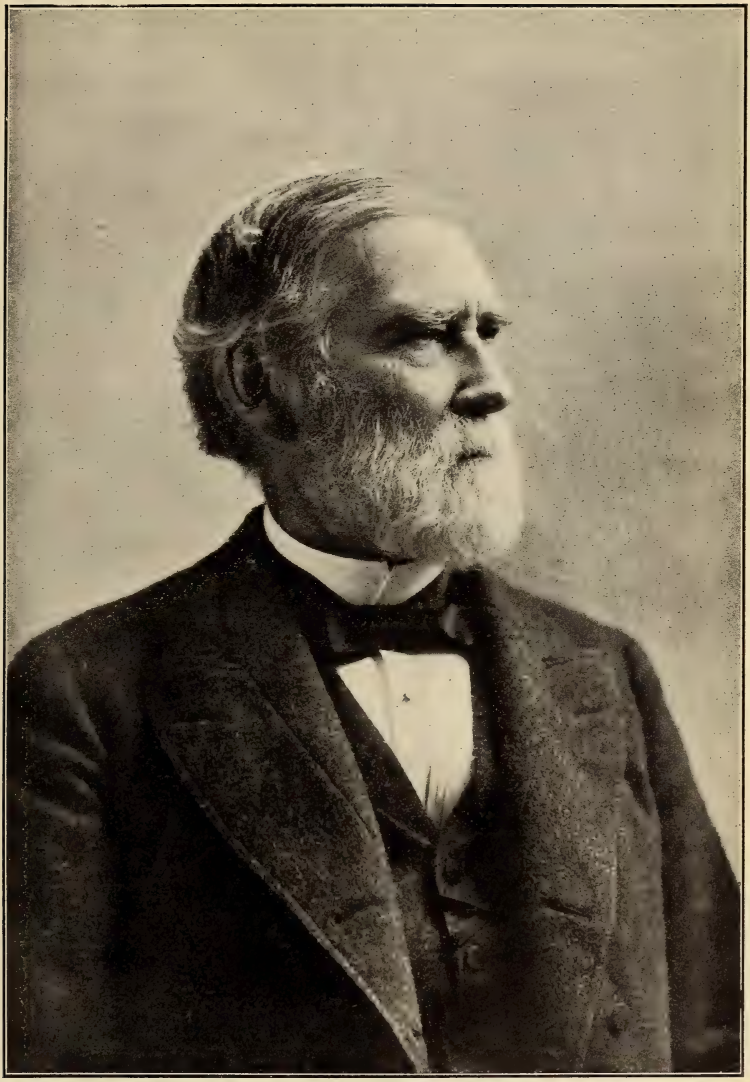
PROFESSOR GEORGE DAVIDSON.

In 1850 a young astronomer came to San Francisco. He had been engaged in geodetic work in the East, particularly in the Coast Survey under Bache. To him was assigned the duty of determining the latitude and longitude of the headlands, islands, rocks and harbors of the Pacific Coast from the Mexican boundary north. One would think that this was work enough for any geodesist; but George Davidson not only completed the work with the utmost fidelity and rarest precision; but somehow found time also to write the "Coast Pilot." It was a self-imposed task and required years of effort; but the book is an imperishable monument to his professional knowledge and his untiring industry.

In one of his late volumes he refers to himself as "one who has enjoyed opportunities that will not fall again to the lot of one man." He could justly say this, for he had then given fifty-seven years of service and was to round it out to sixty.

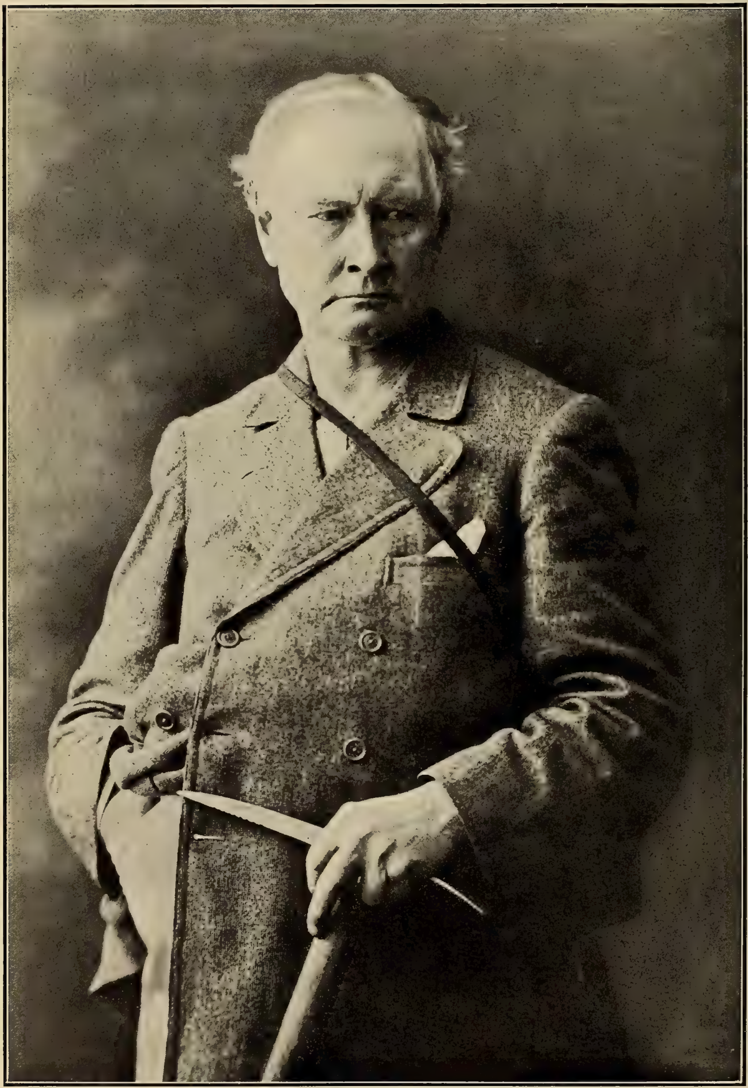
More than 200 memoirs came from his pen, all of them genuine contributions to knowledge. He received many honors from learned bodies at home and abroad. In 1909 the American Geographical Society bestowed the Daly medal upon him for "Fifty years of distinguished work in Geodesy." Few men of science have received wider recognition and few lives have been so filled with work for the good of the community.

At the time of his death, he was Honorary Vice-President of this Club, and had been for many years previous one of its Directors.



Geo Davidson

Member National Academy of Sciences of the United States,
Correspondent of the Bureau of Longitudes of France,
Correspondent of the Academy of Sciences of the French Institute,
Correspondent of the Swedish Anthropological and Geographical Society,
Honorary Corresponding Member Royal Geographical Society,
Honorary Member of the Geographical Association of Berlin,
Honorary Professor of Geodesy and Astronomy and Professor of Geography
in the University of California.



Edward Whymper,
Oct. 1910.

EDWARD WHYMPER.

Edward Whymper, the world's foremost mountaineer, who died in London last week, was a pioneer in the art and practice of high mountain-climbing, which of late years has become extremely popular and has been attended by great mortality, owing to the lack of knowledge and training of many of the climbers. When Mr. Whymper made the first ascent of the Matterhorn in 1865, it was a feat attended by the greatest danger. Six times he assaulted the mountain, and as many times he was repulsed. The seventh attempt was made by what is now the regular route of the climbers, but on the descent there was a terrible disaster. Four of the party slipped and were killed, and Mr. Whymper was saved only by the breaking of the rope which bound him to his comrades. He has told the story with graphic vividness in "Scrambles Among the Alps." Year after year he made arduous and dangerous ascents, until he had stood on most of the high peaks in Switzerland. He was also one of the early climbers in the Andes, and when he was past fifty years of age he made the first ascents in the Canadian Rockies. Sooner or later these peaks would have been ascended if Edward Whymper had not lived; but he was the first expert climber, and his example and experience may be said to have created a profession. He lived to see the ascent of the Matterhorn, which looked so formidable, made comparatively easy. His most striking achievement was the ascent of Chimborazo, attaining an elevation of 20,500 feet; he was the first man, so far as there is any record, who looked down upon the world from that great height. Others have since reached a higher altitude; the Duke d'Abruzzi, brother of the King of Italy, having reached a height of 24,600 feet in the Himalayas. Mr. Whymper was not only a climber, but a delightful recorder of experiences; and his "Scrambles Amongst the Alps in the years 1860-69," "Travels Amongst the Great Andes of the Equator," "Chamonix and Mont Blanc," and "Zermatt and the Matterhorn" are admirable pieces of narrative and descriptive writing, and are to be counted, not only among the most popular books in their field, but as classics in the department of literature to which they belong. Although not in a technical sense a scientist, he rendered valuable service to scientific knowledge; and, above all, he set a fine example of human endurance, courage, and intelligence—qualities which, expressed in his personality, enlarged the activities and the enjoyments of vigorous, athletic men and women.—*N. Y. Outlook,* September 30, 1911.

[Edward Whymper was an honorary member of the Sierra Club. THE EDITORS.]

ALEXANDER G. EELLS.

Those who were present at the dedication of the Le Conte Memorial Lodge in Yosemite Valley, July 3, 1904, will recall the address, published in Vol. V, SIERRA CLUB BULLETIN, page 176, delivered by our fellow member, Alexander G. Eells. In that address he preached "righteousness by living it forth in its native simplicity, stoutly and sturdily," and no man could have so spoken unless it were a standard of his own life.

His death came, totally unexpected by his friends, on October 12, 1911, in his forty-ninth year. Mr. Eells was a native of Ohio and a graduate of the University of California in the class of 1886. During his college life and in his professional and social activities he made a definite and lasting impression for good. The testimony of his friends bears witness to this. Almost his last professional activity of a public nature in behalf of a revised mechanic's lien law was a successful endeavor to establish that law upon a level of greater justice to all affected by its provisions.

Notwithstanding the personal loss that every friend feels, each remembers that Alexander G. Eells lived up to the high standard that he set for himself and for all of us.

LETTER FROM MR. MUIR.

PARA, BRAZIL, Sept. 19, 1911.

DEAR MR. COLBY: I hope you all had a good time this summer, the usual Sierra Club luck.

I've had a glorious time up the Amazon. In about a week from above date I hope to be on my way to Rio de Janeiro. Thence I intend going to Buenos Ayres, sail up the Uruguay and La Plata, cross the Andes to Valparaiso and southwest along the Araucarean forests, etc. Then, perhaps, to South Africa to see its wonderful flora, etc. May be home in the spring.

My kindest regards to all the Club you see.

Faithfully yours,

JOHN MUIR.

[Since writing the foregoing letter Mr. Muir has sailed from South America for Cape Town, South Africa, and probably will not return to California for some months yet.—THE EDITORS.]

TROUT PLANTING.

Golden Trout Carried in State Car to Sisson.

Warden Ferguson returned home on the fish car yesterday afternoon after an absence since the first of the month, and says that this transplanting of golden trout is one of the most notable achievements of the fish commission in the transportation of fish of any kind, but particularly in the line of golden trout, because success has not attended previous efforts, State or Federal whereas success has attended every step in the present expedition and fish of extraordinary growth and size moreover have been secured.

Warden Ferguson left on the first of the month to join his picked pack train crew at Big Meadows, which is in Tulare County, near the Fresno line, and about twelve miles southeast of Hume. In the crew are Deputy Wardens Ellis, Hughes, and Bullard, who as experts in the work were chosen for the delicate work of transplanting the rare and beautiful golden trout. The pack train consisted of nineteen animals, the outfit was the best, the start from Big Meadows was made on the seventh and on the eleventh the train after crossing the mountain ranges arrived at its destination at Volcano Creek in Tulare County at the base of Mt. Whitney, which is the habitat of the golden trout. Nowhere else is this beautiful game fish found.

Little Whitney Creek, an arm of the Volcano, was turned and here the wardens filled up their cans with 1,300 adult specimen of the brilliant hued golden trout, ranging in size from three to eight inches. The principal object of the expedition having been accomplished, the pack train with its fish consignment proceeded leisurely to Lone Pine where the car awaited it, but on Cottonwood Creek on the trail, Warden Ferguson learned of transplanted golden trout in Cottonwood Lake in Inyo County, fish of extraordinary size, it was reported. A halt was made to investigate the report that the fish there had grown to a weight of three pounds.

A two days' halt followed and the big golden trout out of the lakes were readily taken, and the pack train was sent on to Carrell Creek at the foot of the mountain on the Inyo side, nine miles from Lone Pine, with orders to hold the 1,300 stream trout until the larger ones from the lake could be secured. Ten cans from the pack train were sent up to the lake, and thirty odd golden trout were secured, twelve to twenty inches in length, transported to the fish car awaiting at Lone Pine and delivered on Monday evening.

"The feature about this find," said Warden Ferguson, "is that the popular belief has always been that the golden trout's brilliant coloring is due to some mineral element in the water of Volcano Creek, which for ten to twelve miles passes through a lava bed formation and that the fish takes the coloring from something in the water.

"The big fish that we found in the lake were transplanted sixteen years ago, and the formation of the lake is in pure granite with no indication of mineral. The proof was that the golden trout retains its coloration, but the fact is that the lake fish that we sent up to the hatchery are even more brilliantly colored than those taken from the native stream, proving further in their size and growth what has always been contended with our Sierra fish that they thrive better than in their native habitats, when transplanted."

The Volcano golden trout expedition is notable for the fact that it is the biggest consignment of big fish that ever was brought out of the high altitudes and safely delivered in the valley. These golden trout went to the State hatchery to be propagated for distribution in suitable waters in high altitudes next year. The success of this expedition will mark the most notable achievement in the fish transplanting and transportation line ever attempted in this State. The golden trout in Cottonwood Lake were taken at an altitude of over 10,000 feet and those in Little Whitney at 8,000.

Reports from the State hatchery at Sissons are that the 1,300 adult golden trout brought down from the mountains and delivered by mule pack-train to the State fish car in Inyo County, are alive at the hatchery and that there has not been the loss of a fish. In fact, says Ferguson, the loss out of the consignment of this brilliantly hued fish was only three, and that loss was experienced before delivery to the fish car. The experience is cited as a remarkable one in fish transplanting work and is declared to be without a parellel.

The pack train also has returned home, but on the return journey Deputy Bullard picked up 101 golden trout, which after a journey of eight days in cans in pack-mule trains were liberated in three streams with the loss of only one fish. They were liberated in the north fork of the Kaweah River in the northern part of Tulare County, in Madera Basin Creek in this county between Millwood and Hume, near the Kings River Cañon State road, and in Mill Creek near Traweeks on the Millwood road and new Sand Creek road into the mountains.—*Fresno Republican,* Sept.-Oct., 1911.

NATIONAL PARKS.

Extracts from Report of the Acting Superintendent of the Yellowstone National Park. (1911.)

The aggregate number of persons making park trips during the season of 1911 was 23,054.

The experiment of capturing antelope in the park and transferring them by express to the national bison preserve in Montana and to the Wichita game preserve in Oklahoma, for which funds were supplied by the Boone and Crockett Club, was quite successful.

Practically all of the deer that remain in the park during the winter are found within a few miles of Fort Yellowstone, where they are fed hay, and both white-tailed and black-tailed deer become very tame, many of them eating from the hand.

Elk in certain portions of the park are very numerous, and are numbered by thousands both in winter and summer. Last winter the deep snows drove them down in large herds from the latter part of November on, and many of them drifted into Montana, where they did much damage to hay stacks, fields, and fences on the ranches near the park.

Moose are frequently seen in the southeast, southwest, and northwest portions of the park, but usually in wild and unfrequented spots and never near human habitation.

The wild herd of Buffalo has been seen several times, usually in the Pelican Creek Valley. The largest number seen at any one time was twenty-seven.

The bears seem to be increasing—at least they have been very plentiful during the past summer around the hotels and camps. They are very tame. During the summer two grizzlies and three black bears, becoming dangerous to life and property, were killed. In one or two instances men who have become too bold with bear have been attacked and severely injured, usually by a mother bear that thought she was defending her cubs, but investigation of cases of this kind usually result in a conclusion that the bear is not entirely to blame.

The small flock of mountain sheep that winters on the slopes of Mount Everts and in Gardiner Cañon seems to be thriving. Hay is fed to these animals in winter, when they become very tame and are seen at close quarters. As yet they have not come down for the winter, but several small bands have been seen in the mountains, accompanied by a number of lambs, which indicates a fair increase.

In addition to the animals mentioned above, mountain lions, lynx, otter, foxes, badger, beaver, martin, mink, muskrat, and different varities of rabbits, squirrels, and chipmunks are found. Beavers are particularly plentiful and are found in nearly every stream in the park.

More than seventy species of birds, including pelicans, ducks, geese, swan, and other waterfowl inhabit the park during the summer, and some of them, including some of the waterfowl, remain during the winter.

EXTRACTS FROM REPORT OF THE SUPERINTENDENT OF THE GLACIER NATIONAL PARK. (1911.)

Glacier National Park, created by the act of Congress approved May 11, 1910 (36 Stat., 354), is located in northwestern Montana and embraces over 1,400 square miles of the Rocky Mountains, extending north from the main line of the Great Northern Railway to the Canadian border. The eastern boundary is the Blackfeet Indian Reservation and the western boundary is the Flathead River. The park has an area of approximately 915,000 acres, its length averaging sixty miles and its width fifty miles. Within its borders are attractions for the scientist and tourist unsurpassed in any country in the world, tourists of world-wide experience pronouncing it the Switzerland of America. Within its confines are sixty active glaciers, these ice sheets being the sources of beautiful cascades and roaring mountain streams flowing into countless clear, placid lakes for which the park is famed, the most noted of these being Lake McDonald, Lake St. Marys, Lake Louise, Iceberg Lake, Red Eagle Lake, Kintla Lake, Bowman Lake, Kootenai Lake, Logging Lake, Quartz Lake, Harrison Lake, and Two Medicine Lake. Lake McDonald, situated two and one-half miles from Belton, a little town on the main line of the Great Northern Railway, is one of the most beautiful lakes in America. It is 3,154 feet above sea level, twelve miles long, two miles wide, and surrounded by mountains covered with virgin forests of western larch, cedar, white pine, Douglas fir, spruce, and hemlock. The air about Lake McDonald is remarkably clear and pure, the fragrance of the fir, pine, and cedar producing a refreshing and invigorating atmosphere.

Iceberg Lake is a small sheet of water about sixteen miles north of Lake McDonald. It is so named because of the great floes which are to be seen on its surface in midsummer.

The St. Marys Lakes are located on the eastern side of the park, northwest of Midvale. These lakes are long and ribbon-like, one side being heavily forested, while on the other side the mountains rise sheer from the water's edge. Upper St. Marys Lake is eleven miles and the Lower St. Marys Lake seven miles in length. Equally as much can be said in regard to the beautiful scenery surrounding all the other lakes.

Avalanche Basin, a remarkable U-shaped valley eight miles from Lake McDonald, is one of the most attractive and impressing features of the park. Nestling in the valley below the basin lies Avalanche Lake, into which dash cascades and cataracts that head in the melting snow and ice above and leap thousands of feet to the lake beneath.

The principal glaciers in the park are Blackfoot, Grinnell, Harrison, Pumpelly, Red Eagle, Sperry, and Chaney, which range in area from a few hundred yards to several miles in extent.

From the summit of Red Eagle Mountain one of the grandest views of mountain scenery in America is obtainable, this spot being a favorite with artists who visit the park.

The park abounds in all varities of game that are indigenous to this section of the country, such as bear, elk, moose, deer, mountain sheep, mountain goat, mountain lion, as well as the smaller wild animals of the forest.

Fishing in the park is especially good and quite an attraction to all who visit it. Practically all the streams and lakes abound in many species of gamy trout.

Between June 1, 1911, and October 1, 1911, there were 4,000 visitors in the park.

Exhibition of National Park Pictures.

A collection of photographs of scenes in the national parks is now being assembled under direction of the Department of the Interior for exhibition in public libraries and other public institutions throughout the country. This collection will be composed of large photographs, many of which will be hand colored, of some of the remarkable views that have made the national parks famous throughout the world. This collection will include views of the Great Falls and Grand Cañon of Yellowstone River, the geysers, and the Mammoth Hot Springs in Yellowstone National Park; the beautiful glaciers and mountain lakes in the Glacier National Park; the wonderful cliff dwellings in the Mesa Verde National Park; the majestic Sequoias, the largest trees in the world, in the Yosemite, General Grant, and Sequoia National Parks; the great ice fields on Mount Rainier in the Mount Rainier National Park; the remarkable Crater Lake, once the caldera of an active volcano, in the Crater Lake National Park; and the impressive rock formations and waterfalls in the Yosemite National Park.

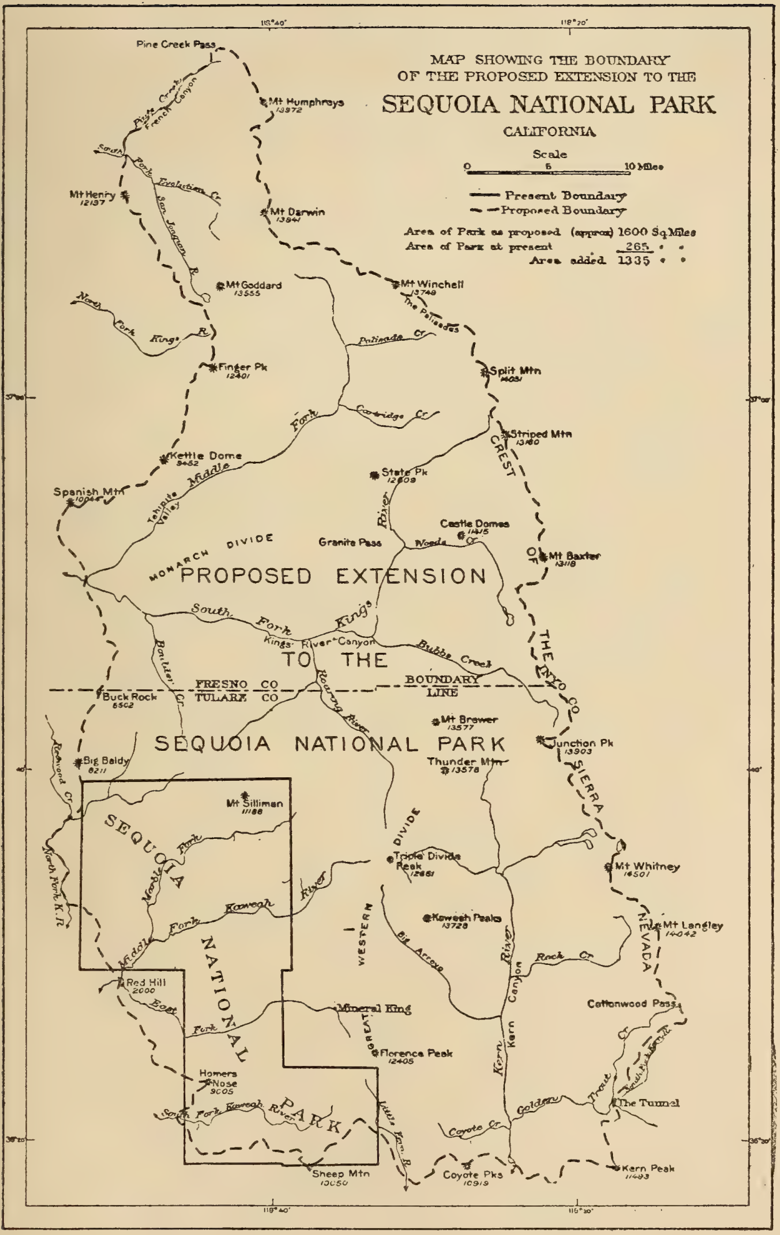
EXTRACTS FROM REPORT OF THE ACTING SUPERINTENDENT OF SEQUOIA AND GENERAL GRANT NATIONAL PARK. (1911.)

There was quite an increase in the number of tourists entering the parks this season over that of last season, as follows:

The total for both parks was 5,274, compared with 3,585 for last year. The present railroad station for the Sequoia Park is Lemon Cove. There is a hotel at this place. The River Inn Co. has a hotel and store one mile above Three Rivers and about ten miles from Lemon Cove, on the road to the Giant Forest. The same company also furnishes tent hotel accommodations and furnishes campers' supplies at Camp Sierra, in the Giant Forest.

Extension of the parks has been discussed by several of my predecessors, and a variety of new boundaries have been suggested and the advantages and disadvantages to the park that would result from such extensions have been gone over quite thoroughly. In thinking over the matter and discussing the same with the rangers on duty in the Sequoia Park, who have a thorough knowledge of the country and several years' experience of active duty in their present positions, I am of the opinion that the boundary suggested by Mr. R. B. Marshall, chief topographer, Geological Survey, would be most desirable.

This boundary is a natural one, being the ridge line of numerous mountain chains. Practically all the new territory that would be acquired is now in the national forest, is of little value commercially, and of great value as a park reserve. Its natural beauties are great and varied, there is comparatively little deeded land within the indicated boundary, it forms a natural game preserve, and within this extensive area game of all kinds should prosper and increase rapidly, and be able to escape the hunter that each year is promptly, at the opening of the hunting season, at the most desirable points for the killing of such game, that by reason of the protection afforded by park regulations, easily fall victims to the enthusiastic and persistent hunter. These ridges are natural barriers and the game is not apt to stray or roam beyond them. Also within this proposed area there are some of the finest trout streams in the world, and these streams and the fishing therein should be so regulated as to preserve their reputation indefinitely.

MAP SHOWING THE BOUNDARY
OF THE PROPOSED EXTENSION TO THE
SEQUOIA NATIONAL PARK
CALIFORNIA
Scale
0
5
10 Miles
Present Boundary
Proposed Boundary
Area of Park as proposed (approx) 1600 Sq. Miles
Area of Park at present 265 " "
Area added 1335 " "
118°40'
118°20'
37°00'
36°40'
36°20'
Pine Creek Pass
Piute Creek
French Canyon
Mt Humphreys 13972
South Fork
Evolution Cr.
San Joaquin R.
Mt Henry 12137
Mt Darwin 13841
Mt Goddard 13555
Mt Winchell 13748
The Palisades
North Fork Kings R.
Palisade Cr.
Finger Pk 12401
Split Mtn 14051
Fork
Cartridge Cr.
Striped Mtn 13160
Kettle Dome 9452
Middle
Tehipite Valley
Spanish Mtn 10046
State Pk 12609
River
CREST OF THE
Castle Domes 11415
Granite Pass
Woods Cr.
Mt Baxter 13118
MONARCH DIVIDE
PROPOSED EXTENSION
South Fork Kings
Kings River Canyon
TO THE
Bubbs Creek
Boulder Cr.
FRESNO CO
TULARE CO
BOUNDARY LINE
INYO CO.
Buck Rock 8502
Roaring River
Mt Brewer 13577
SEQUOIA NATIONAL PARK
Junction Pk 13903
Big Baldy 8211
Redwood Cr.
Thunder Mtn 13578
SIERRA
Mt Silliman 11188
SEQUOIA
Fork
Middle
DIVIDE
Triple Divide Peak 12651
Mt Whitney 14501
North Fork K. R.
River
Kaweah
Fork
Kaweah Peaks 13728
Mt Langley 14042
NEVADA
WESTERN
Big Arroyo
River
Rock Cr.
Middle
NATIONAL
Canyon
Red Hill 2000
East
Cottonwood Pass
Mineral King
GREAT
Fork
Kern
Kern
Florence Peak 12405
Homers Nose 9005
Trout Cr.
South Fork Kern R.
Golden Tr.
The Tunnel
South Fork Kaweah River
PARK
Little Kern R.
Coyote Cr.
Sheep Mtn 13050
Coyote Pks 10919
Kern Peak 11493

EXTRACTS FROM REPORT OF SUPERINTENDENT OF THE CRATER LAKE NATIONAL PARK. (1911.)

Probable total of visitors, 4,500.

The Crater Lake Co. contemplates building a fine hotel on the rim of the lake.

There was located and surveyed a proposed road completely encircling the lake. For most of the distance this road will be immediately upon the rim of the crater, and when it shall have been completed it will be beyond question one of the grandest scenic roads in the world.

Crater Lake is well stocked with rainbow trout; those caught are usually from fourteen to twenty inches in length, and some have been caught twenty-four or twenty-six inches long and weighing six or seven pounds.

EXTRACTS FROM THE REPORT OF THE SUPERINTENDENT OF THE MOUNT RAINIER NATIONAL PARK. (1911.)

During the 1911 season 10,306 visitors entered the park.

The summit of Mount Rainier was reached by 208 persons.

Three persons perished in storms while attempting to ascend the mountain.

It has been planned to erect a stone shelter hut at Camp Muir.

One thousand and fifty-three automobiles entered the park in 1911 and no accidents of a serious nature have occurred.

EXTRACTS FROM REPORT OF THE ACTING SUPERINTENDENT OF THE YOSEMITE NATIONAL PARK. (1911.)

The Yosemite Valley is open to travel all the year round, and, while it is impracticable because of the snow to ascend any of the trails up to the rim of the valley, the principal roads on the floor of the valley are passable.

It is gratifying to be able to report that there have been no serious forest fires in the park this season. The few that occurred were discovered before they had spread and were promptly extinguished.

The deer, bear, grouse, and quail continue to increase. Many coyotes were destroyed last winter by poison after the bears went into hibernation.

The measures adopted for driving the bears out of Yosemite Valley proved in a great degree successful, and but little annoyance to campers was caused by them this season.

Thirty-two cans cantaining about 62,000 Loch Leven, Rainbow, and Eastern Brook trout were received July 20th at El

Portal from the California fish and game commission, Sisson hatchery, and during that night eighteen cans were planted in the Merced River between the park boundary and Happy Isles, four cans in Bridal Veil Creek below the falls, two cans in Yosemite Creek below the falls, and eight cans in the Merced in Little Yosemite Valley.

Trout were also transplanted from nearby streams to Dorothy, Mary, and Tilden Lakes, in the extreme northern part of the park. Some trout were placed also in Miller Lake by the Sierra Club.

The urgent recommendations of previous years that the Government extinguish the title to all patented lands in the park is renewed.

There are approximately 20,000 acres of these lands, consisting of timber claims and a few claims that were taken up under the homestead act and were never occupied as homesteads, but simply used as a pretext for bringing in stock or cattle to stray upon the park lands.

The timber claims are valuable and are becoming more so every year. Some of the finest sugar pine timber in California lies within the park along the road from Wawona to Chinquapin, and the Yosemite Lumber Co. is now building a logging railroad from El Portal to the park boundary near Chinquapin with the view of cutting the timber from 6,000 acres of land that it claims within the park near Alder Creek. The work of denudation in that locality is imminent, and this is what will happen to the timber on all the patented lands in the park in a short time unless they are purchased by the Government. This matter demands urgent attention and should no longer be neglected. It would be greatly to the interests of the Government to extinguish all private claims within the park.

The Yosemite Valley El Portal road is the main highway into the park. The sprinkling system installed on it last season was extended by putting in more water supply stations, and the dust nuisance was completely eliminated. The portion of this road between Pohono bridge and the park boundary, about ten miles, is still rocky, narrow, and tortuous, and it should be widened, straightened, regulated in grade, and metalled.

Work was resumed on the improvement of that portion of the road on the south side of the Merced River, between El Capitan Bridge and Yosemite Village, and 3,145 feet have been completed, with work still in progress.

The portion of the Wawona road that belongs to the Government should be improved and sprinkled, and all the roads on the floor of the valley should be metalled, parts of them being relocated in order to follow more attractive routes, and the road between the village and Happy Isles, on the south side of the river, should be metalled and sprinkled first, because of the preponderance of travel over it.

The new trail from above Mirror Lake to Lake Tenaya has been completed at a total cost of $6,461.43. The trip from Yosemite Valley to Lake Tenaya over this trail is attractive and the trail was much traveled this season.

The trail from Yosemite Valley to Lake Merced was made about four miles shorter.

There is only one hotel in Yosemite Valley, and it was built years ago for summer use only, possesses few conveniences, and does not admit even of being remodeled to advantage. A new hotel with all conveniences for winter and summer travel and located on the north side of the valley is much needed.

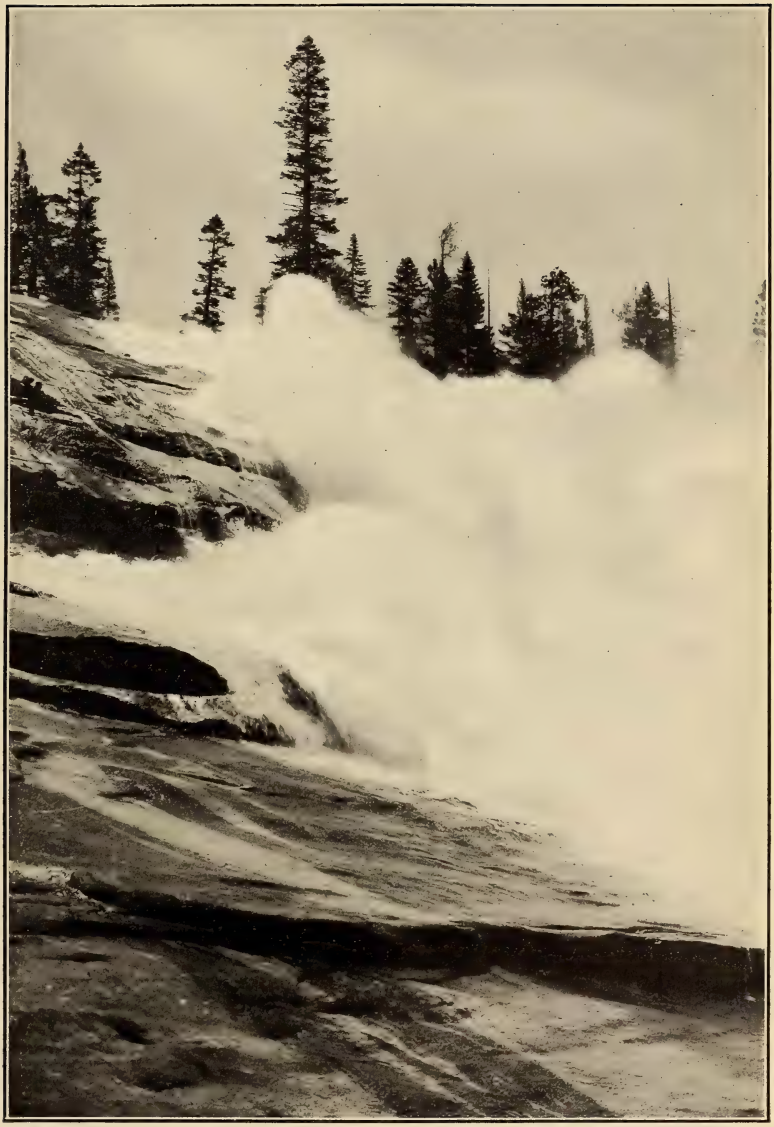
A granite seat of appropriate design, dedicated to the memory of Galen Clark, was completed and set in place about a quarter of a mile south of the foot of Yosemite Falls.

Between October 1, 1910, and September 30, 1911, there was a total for the year of 12,530 visitors.

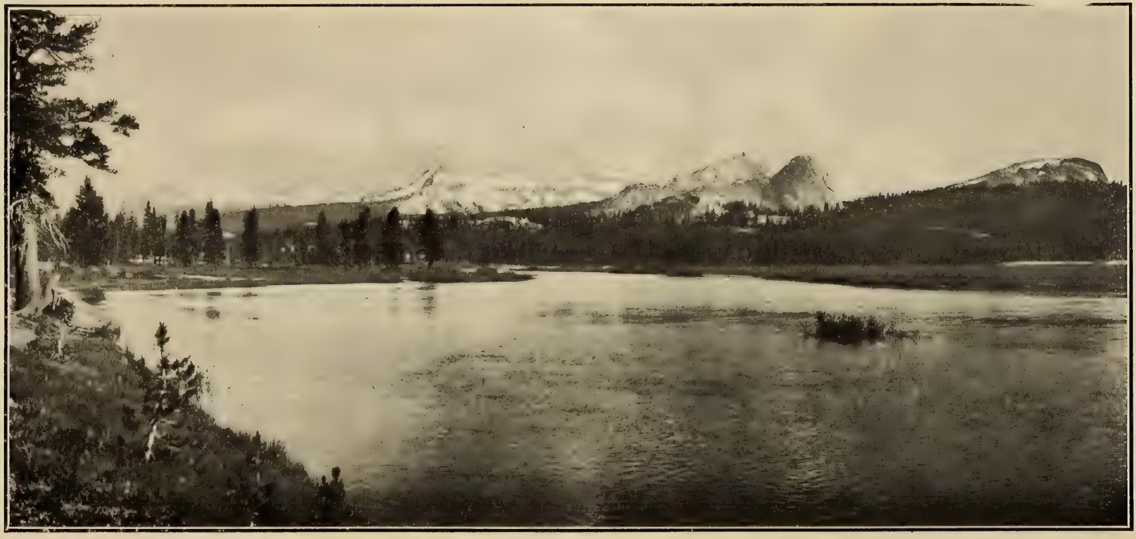
IMPROVEMENTS IN THE NATIONAL PARKS OF CALIFORNIA.

The Department of the Interior proposes to spend $381,620 for various much needed improvements in the national parks in California during the fiscal year ending June 30, 1913, if the amount requested by the Secretary of the Interior is appropriated by Congress. This is an increase of $314,070 over the appropriation for the current fiscal year. The increases requested are as follows: Yosemite National Park, from $50,000 to $274,000; Sequoia National Park, from $15,550 to $89,550; General Grant National Park, from $2,000 to $17,250. The items for each park are as follows:

Yosemite National Park: New road along south rim of Yosemite Valley from Fort Monroe to Glacier Point, $75,000; improving the road on the north side of Merced River from Pohono bridge to the junction with the Coulterville road, $50,210; continuing the improvement of the road on the south side of Merced River from Camp Ahwanee to Happy Isles, $46,750; a re-enforced concrete bridge to replace the Sentinel bridge over Merced River, $14,000; construction of trail from Merced Lake up the Merced River Cañon to the head of the Merced River, $5,000; construction of trail from the head of Lyell Fork Meadows to the Lyell Glacier, $1,500; continuing the installation of the water-distributing system in the Yosemite



WATERWHEEL FALLS, GRAND CAÑON OF THE TUOLUMNE.
(See page 154.)
Photograph by Herbert W. Gleason.



LOOKING BACK ACROSS LOWER TUOLUMNE MEADOWS.
Photograph by E. T. Parsons.

Valley, $25,000; garbage incineratory, $6,900; operating the present road-sprinkling system, $7,500; the extension of the road-sprinkling system to Fort Monroe and Happy Isles and operation of the same, $7,500; repair of existing roads, trails, bridges, culverts, buildings, plants, fences, camp sanitation, and removal of undergrowth, $25,000; salaries, $10,460.

Sequoia National Park: Widening twenty-one miles of Giant Forest wagon road to eighteen feet, and constructing drain culvert, $25,200; constructing forty miles of trail, $12,000; improving 150 miles of trail, $15,000; construction of twenty miles of telephone line, $8,000; fencing fifty miles of the park boundary, $10,000; completion of water system for Tourist Camp at Camp Sierra, including public drinking fountains, $2,500; constructing a stairway and hand-rail on Moro Rock, $2,500; construction of pier, bathhouse, and boathouse at Twin Lakes, $2,000; improvement and development of Paradise and Clough Caves, $2,000; piping water from Log Creek to Military Camp, $2,000; repainting Marble Fork bridge, $250; fencing rangers' pasture and constructing and painting rangers' cabins, $2,400; salaries of rangers, $5,700. ,

General Grant National Park: Construction of two miles of wagon road, $5,000; construction of two miles of trail, $400; completing water-supply system at Tourist Camp, $500; fencing Tourist Camp ground, $800; rebuilding eight miles of park boundary fence, $1,600; construction and improvement of park buildings, $1,050; forestation and protection of growing forest, $5,000; construction of three gateways at entrance to park, $750; construction of public bathhouse, $750; salary of park ranger, $1,400.

For the development and care of the national parks, the Secretary of the Interior has asked Congress to appropriate the sum of $791,080.60, an increase of $617,830.61 over the appropriations for the current fiscal year. The national parks constitute ideal recreation grounds for thousands of people, but their development and use are seriously retarded by the lack of adequate roads and trails, and until sufficient money is appropriated for beginning a comprehensive plan of development, the parks will fall far short of rendering the important public use for which they are intended. The general public interest in these pleasure grounds is shown by the fact that in a list* recently issued by the Department of the Interior 390 magazine articles on the parks are enumerated. It is the intention of the Department to make the principal places of interest in the parks more accessible, to render traveling more comfortable by sprinkling the roads throughout the dry season, and to guard the health of the traveler by the installation of proper water supply and sewerage systems. The responsibility for the future conduct of the national parks must rest with Congress, but the Department feels that the financial needs of these reservations should be clearly presented to Congress in the annual estimates.

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*This list will be sent to applicants upon request.

DEVIL POSTPILE NATIONAL MONUMENT, CALIFORNIA.

By the President of the United States of America, a Proclamation: Whereas the natural formations known as the Devil Postpile and Rainbow Falls, within the Sierra National Forest, in the State of California, are of scientific interest, and it appears that the public interests will be promoted by reserving said formations as a National Monument;

Now, therefore, I, William H. Taft, President of the United States of America, by virtue of the power in me vested by section two of the Act of Congress approved June eighth, nineteen hundred and six, entitled "An Act for the preservation of American antiquities," do proclaim that there are hereby reserved from all forms of appropriation under the public lands laws, subject to all prior valid adverse claims, and set apart as a National Monument, all the tracts of land in the State of California shown as the Devil Postpile National Monument on the diagram forming a part hereof.

The reservation made by this proclamation is not intended to prevent the use of the lands for Forest purposes under the proclamation establishing the Sierra National Forest. The two reservations shall both be effective on the land withdrawn, but the National Monument hereby established shall be the dominant reservation and any use of the land which interferes with its preservation or protection as a National Monument is hereby forbidden.

Warning is hereby given to all unauthorized persons not to appropriate, injure, remove, or destroy any feature of this National Monument, or to locate or settle upon any of the lands reserved by this proclamation.

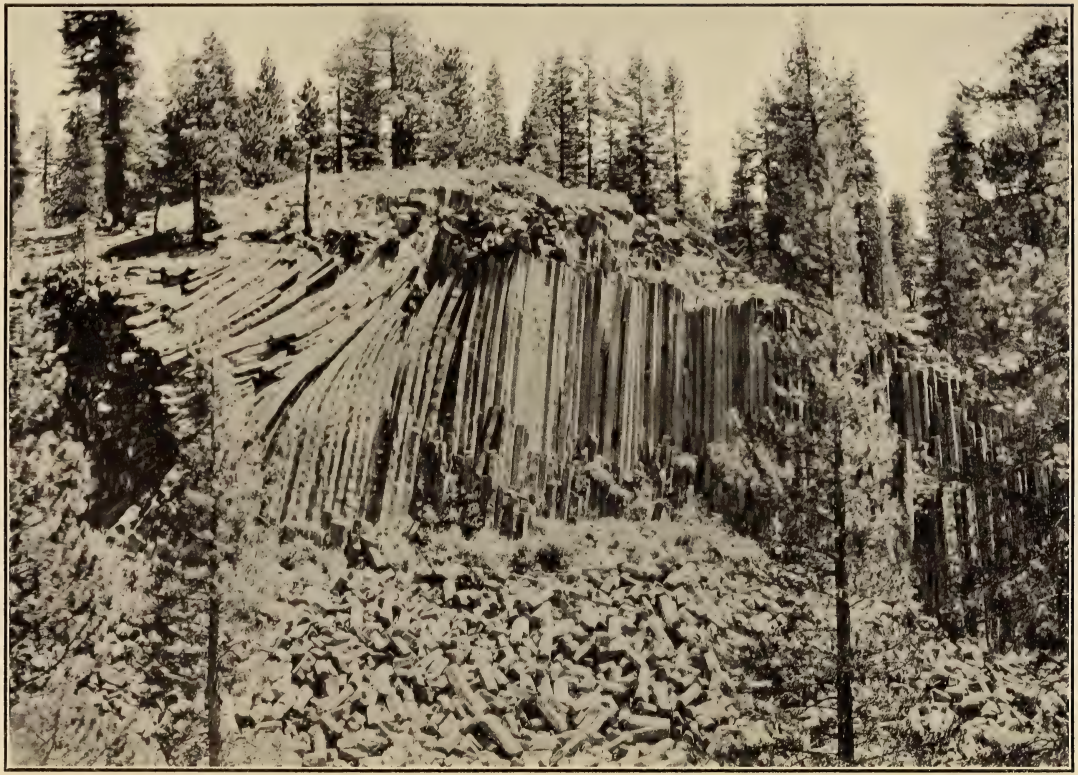
In Witness Whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the City of Washington this sixth day of July, in the year of our Lord one thousand nine hundred and eleven, and of the Independence of the United States the one hundred and thirty-sixth.

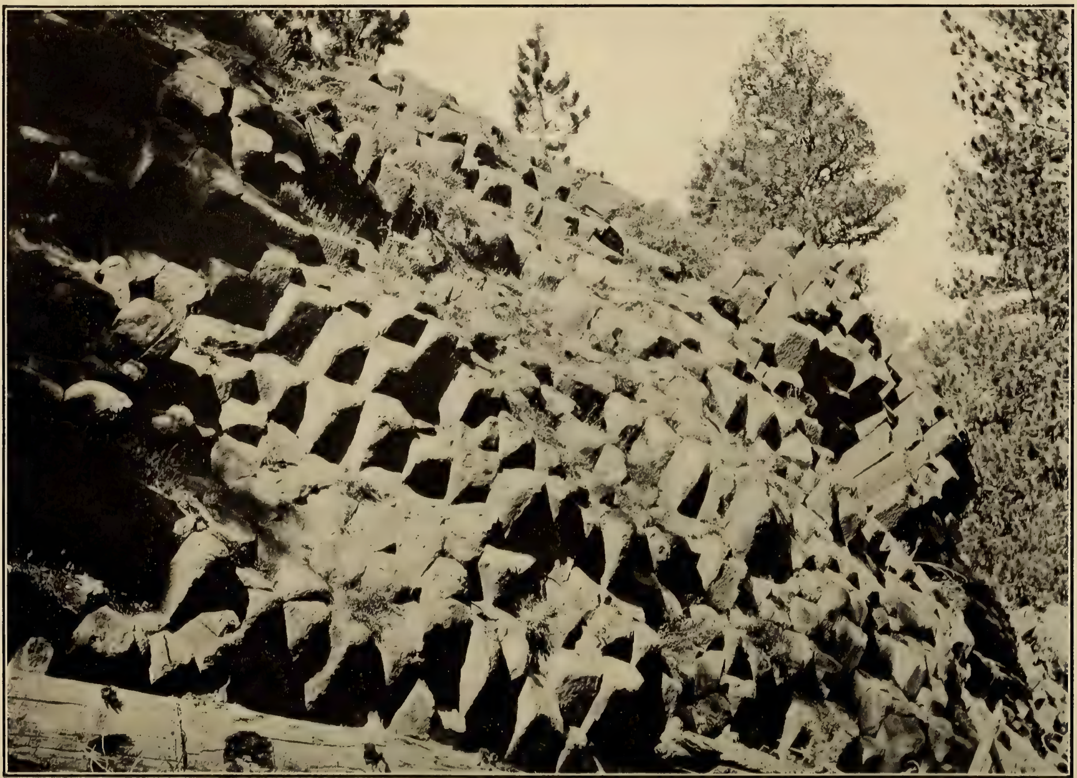
WM. H. TAFT.

By the President:

P. C. KNOX, *Secretary of State.*



THE DEVIL'S POSTPILE, NOW INCLUDED IN A NATIONAL MONUMENT.
Photograph by W. L. Huber.



AN END VIEW OF THE DEVIL'S POSTPILE.
Photograph by W. L. Huber.

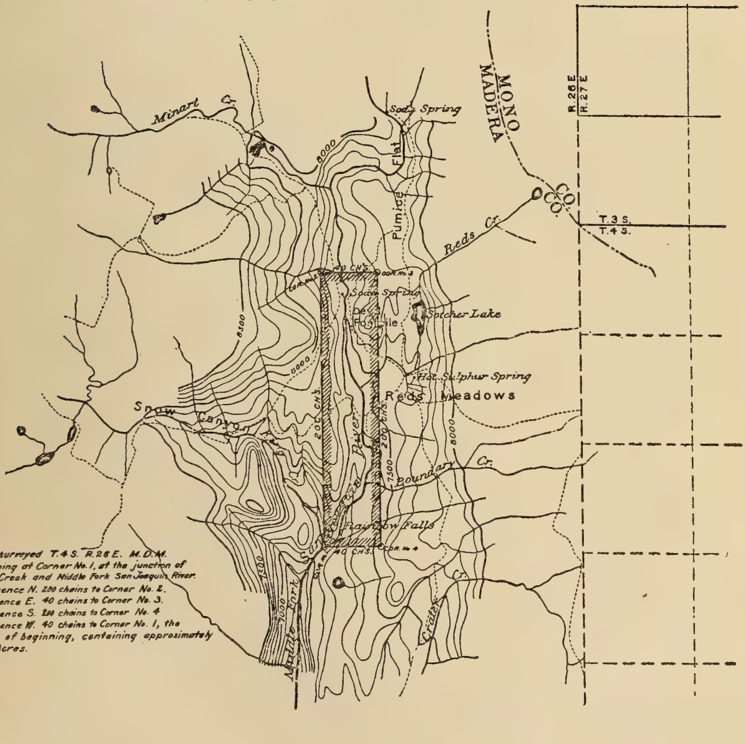
FOREST SERVICE, U S. DEPT OF AGRICULTURE
1911

DEVIL POSTPILE NATIONAL MONUMENT
INCLUDING
RAINBOW FALLS
CALIFORNIA

MT. DIABLO MERIDIAN
AREA APPROXIMATELY 800 ACRES

▨ NATIONAL MONUMENT BOUNDARY

DIAGRAM FORMING PART OF PROCLAMATION DATED JULY 6, 1911


Minaret Cr.
Soda Spring
8000
Flat
Pumice
MONO
MADERA
CO.
CO.
R.26 E
R.27 E
T.3 S.
T.4 S.
Reds Cr.
40 CHS.
COR. No. 2
COR. No. 3
Soda Spring
Devil Postpile
Sotcher Lake
8500
8000
Hot Sulphur Spring
Reds Meadows
Snow Canyon
200 CHS.
200 CHS.
River
8000
7500
Boundary Cr.
San Joaquin
Rainbow Falls
40 CHS.
COR. No. 4
COR. No. 1
Cr.
Crater
7500
7000
Middle Fork

In unsurveyed T.4 S. R.26 E. M.D.M.
Beginning at Corner No. 1, at the junction of King Creek and Middle Fork San Joaquin River.
Thence N. 200 chains to Corner No. 2.
Thence E. 40 chains to Corner No. 3.
Thence S. 200 chains to Corner No. 4
Thence W. 40 chains to Corner No. 1, the place of beginning, containing approximately 800 Acres.

ASSEMBLY JOINT RESOLUTION NO. I,

RELATIVE TO PETITIONING CONGRESS TO APPROPRIATE ONE MILLION ($1,000,000) DOLLARS FOR THE IMPROVEMENT OF YOSEMITE NATIONAL PARK.

WHEREAS, The Yosemite Valley and Mariposa grove of big trees were receded and regranted to the United States of America by the Legislature of the State of California in 1905 on the representation and with the understanding that the Yosemite Valley would be cared for by the Federal Government as was the Yellowstone Park, and that similar appropriations would be made for the improvement of the Yosemite Park; and

WHEREAS, There has in recent years been more than one million dollars spent on the Yellowstone Park in annual appropriations of two hundred and fifty thousand dollars each and said park and its road system improved in accordance with a comprehensive plan; and

WHEREAS, The proximity of the Yosemite Valley to San Francisco was one of the strong reasons urged in favor of holding an exposition in San Francisco in 1915; and

WHEREAS, Many improvements are required in the Yosemite National Park in order to properly prepare the valley and vicinity to receive the thousands of travelers from all parts of the world who will wish to visit the valley during that year; therefore, be it

Resolved by the Senate and Assembly of the State of California, concurring jointly, That our Senators and Representatives in Congress are hereby requested to use all honorable means to secure an appropriation of one million ($1,000,000) dollars extending over a period of four years, two hundred and fifty thousand dollars to be appropriated by Congress each year, to be expended in the improvement of the Yosemite National Park, such expenditure to be made in pursuance of some comprehensive plan of development; and be it further

Resolved, That a copy of these resolutions be forthwith transmitted by the chief clerk of the Assembly to the President of the Senate of the United States and the Speaker of the House of Representatives of the United States, and a copy hereof to each member of Congress from the State of California.

[At the request of the Sierra Club the foregoing resolution was passed by the State Legislature in December, 1911. A copy of the following analysis of the situation was sent to each member of the last State Legislature. Let everyone who has any influence aid in securing this appropriation.—THE EDITORS.]

Yosemite Recession Again.

San Francisco, December 7, 1911.

The return of Yosemite Valley to the State is being urged in the Legislature. The reasons given for this proposed action are inadequate appropriations by Congress and neglect of the valley under Federal administration. Since the Sierra Club more than any other one factor was responsible for the recession of Yosemite Valley to the United States in 1905-6, this statement is made in behalf of the Club.

Yosemite Valley now has expended on it each year more than twice as much as the State expended prior to recession.

FEDERAL APPROPRIATIONS SINCE RECESSION.		
1911,	$50,000	
1910,	62,000	
1909,	30,000	
1908,	30,000	
1907,	30,000	
	$202,000	total Federal appropriation for 5 years.
	$40,400	average Federal appropriation per year.

STATE APPROPRIATIONS PRIOR TO RECESSION.		
1904-03,	$32,000	total for 2 yrs.
1902,	21,750	total for 2 yrs.
1901,	25,000	for power plant
1900-99,	28,000	total for 2 yrs.
	$106,750	total appropriation by State for 6 years.
	$17,791.66	average State appropriation per year.

In addition to the foregoing we must recall that the Federal Government has collected and expended in improving the valley an average of about $10,000 per year from concessions in the valley, whereas the State collected and expended but a few hundred per year from this source. To be entirely fair we must deduct $5,000 from the annual Federal average expenditure which was the amount appropriated by Congress for years for the National park surrounding the State park prior to recession. To offset this is the fact that under army control the salaries of officers and soldiers in charge of the park and their expenses and subsistence are paid by the army and none of this comes out of the annual appropriations which, together with revenue from concessions are practically all expended in improvements. Under the State régime several thousand dollars for salaries, traveling, and office expenses were expended annually out of even the small State appropriations. It will thus be seen that as a matter of fact only about $10,000 annually was spent by the State on actual road and trail work and other improvements in the Yosemite Valley, whereas now the Federal Government spends annually about $40,000 on clear work such as roads, trails, etc.

When the State turned over the valley to the Federal Government the Pohona Bridge had been condemned some three years, the flooring removed and two miles of beautiful road on the floor of the valley withdrawn from general travel. The Stoneman Bridge was in a dangerous condition for heavy travel, and the Sentinel Bridge so weak that nothing but passenger wagons were allowed to cross; most of the culverts were broken through and the main roads and trails in a terrible condition. These were the three most important bridges in the Valley.

Under Federal control a steel bridge replaced the condemned Pohona Bridge; a new truss bridge replaced the dangerous Stoneman Bridge and the Sentinel Bridge was repaired and soon will be replaced. A hundred thousand dollars has been spent on permanent road work, the main road to El Portal is being sprinkled, old trails repaired and put in good condition and splendid new ones built as, for example, the new scenic trail above Mirror Lake leading out of the valley to the High Sierra. Under State control all of the best pasture in the upper end of the valley was fenced in and rented for a nominal sum to a private concern. As soon as the Federal Government got control and this lease expired, all the unsightly fences came down and now the public enjoys these fine meadows, and campers can feed their own animals there. If this be neglect, what shall we term the old State régime and its famous junketing trips?

But we face "a condition and not a theory." It is as useless to try to secure the Yosemite Valley for the State as to ask for the Presidio Military Reservation. It will be a waste of time and energy. If instead, we will only devote the same time and energy to securing additional appropriations from Congress, we will accomplish something. In view of 1915 and the fact that the proximity of Yosemite was one of the arguments advanced for securing the Exposition for San Francisco, the Legislature and every loyal citizen of the State should memorialize and urge Congress to prepare Yosemite for the Fair by appropriating $1,000,000 for its improvement in four $250,000 annual installments, following out a comprehensive plan of development just as it did in the case of the Yellowstone. Each year the Sierra Club has consistently urged such an appropriation, but alone and unaided it has only succeeded in helping to raise the annual Congressional appropriation to $50,000. Let everyone pitch in and help, for the State has far more than it can properly take care of in the way of expenditures right now, and if it has any spare money for parks, let it purchase and preserve a tract of primeval redwood on Eel River in Humboldt County, for there is nothing like that forest wonder anywhere else in the world, and a few years from now it will have perished and passed beyond the power of man to replace. Very respectfully,

Wm. E. Colby, *Secretary of Sierra Club.*

EXTRACTS FROM REPORT OF THE SECRETARY OF THE INTERIOR. (1911.)

BUREAU OF NATIONAL PARKS.

There are twelve national parks, embracing over 4,500,000 acres, which has been set apart from time to time by Congress for the recreation of the people of the Nation. While public interest in, and use of, these reservations is steadily increasing, as shown by the growing number of visitors, adequate provision has not been made for their efficient administration and sufficient appropriations have not been made for their proper care and development. At present, each of these parks is a separate and distinct unit for administrative purposes. The only general supervision which is possible is that obtained by referring matters relating to the national parks to the same officials in the office of the Secretary of the Interior. Separate appropriations are made for each park and the employment of a common supervising and directing force is impossible. Many of the problems in park management are the same throughout all of the national parks and a great gain would be obtained and substantial economics could be effected if the national parks and reservations were grouped together under a single administrative bureau. Bills to create a bureau of national parks have heretofore been introduced in Congress, and in my judgment they should immediately receive careful consideration so that proper legislation for this purpose may be enacted. Adequate appropriation should also be made for the development of these pleasure grounds of the people, especially through the construction of roads and trails, and their proper care and maintenance. In several of the national parks there are large private holdings which should be acquired by the Government.

NATIONAL PARKS AND RESERVATIONS.

Public interest in these national reservations, not only in this country, but abroad, is constantly increasing, as is indicated by the number of visitors thereto. During the past year the total number of visitors to all these parks aggregated approximately 224,000, as against 198,506 in 1910. There is every reason to believe that travel thereto will be greatly augmented in the future, especially during 1915, when the Panama-Pacific International Exposition will be held in San Francisco, and the various transcontinental roads will doubtless provide a transportation rate calculated to attract visitors to the various reservations as well as to the Exposition.

For the purpose of bringing together the superintendents of the various parks, and discussing the many difficult problems presented in the administration of the affairs of each, I presided at a conference held under my direction in the Yellowstone National Park in September, 1911, at which there were in attendance the Assistant Secretary, the chief clerk, and other representatives of this Department, representatives of the Departments of Agriculture and War, the various transcontinental railroads, and of concessionaires in the several reservations. Many phases of park administration were discussed, including hotel accommodations, public transportation, construction of roads, trails, and bridges, fire protection, forestry, protection of game, and the enforcement of the park regulations generally. This conference should result in more effective administration than it has heretofore been practicable to secure. The consensus of opinion, however, at the conference was that development of the national reservations should proceed along more liberal lines than has heretofore obtained, and that the supervision of the activities of the various parks should be centralized in a bureau especially charged with such work.

NATIONAL PARK BUREAU BILL.

In the Senate of the United States, December 7, 1911, Mr. Smoot introduced the following bill, which was read twice and referred to the Committee on Public Lands:

"A bill to establish a Bureau of National Parks, and for other purposes.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby established in the Department of the Interior a bureau to be called the Bureau of National Parks, which shall be under the charge of a director, who shall be appointed by the President, by and with the advice and consent of the Senate, and who shall receive a salary of six thousand dollars per annum; and there shall also be in said bureau such experts, assistants, and other employees as may from time to time be authorized by Congress.

"Section 2. That the director shall, under the direction of the Secretary of the Interior, have the supervision, management, and control of the several national parks, the national monuments, the Hot Springs Reservation in the State of Arkansas, lands reserved or acquired by the United States because of their historical associations, and such other national parks, national monuments, or reservations of like character as may hereafter be created or authorized by Congress.

"Section 3. That there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, for the general expenses of the Bureau of National Parks, including the pay of the director and the necessary experts, assistants, and other employees at Washington, District of Columbia, and in the field, and other expenses requisite for and incidental to the general work of the Bureau of National Parks, whether at Washington, District of Columbia, or in the field, to be expended under the direction of the Secretary of the Interior, the sum of seventy-five thousand dollars, to be immediately available.

"Section 4. That the Secretary of the Interior shall make and publish such rules and regulations as he may deem necessary and proper, not inconsistent with the Constitution and laws of the United States, for the management, care, and preservation of such parks, monuments, and reservations, and for the protection of property and improvements, game, and natural scenery, curiosities, and resources therein, and any violation of the provisions of this Act, or of such rules and regulations, shall be punished as is provided for in section fifty of the Act entitled 'An Act to codify, revise, and amend the penal laws of the United States,' approved March fourth, nineteen hundred and nine, as amended by section six of the Act of June twenty-fifth, nineteen hundred and ten (Thirty-sixth United States Statutes at Large, page eight hundred and fifty-seven). He may also, upon terms and conditions to be fixed by him, sell or dispose of dead or insect-infected timber, and of such matured timber as, in his judgment, may be disposed of without detriment to the scenic or other purposes for which such parks, monuments, or reservations are established, grant leases and permits for the use of the land, the development of the resources, or privileges for the accommodation of visitors in the various parks, monuments, and reservations herein provided for, for periods not exceeding twenty years. The funds derived from such sales, leases, permits, and privileges shall be covered into the Treasury, to be expended by the director, under the supervision of the Secretary of the Interior, in the administration, maintenance, and improvement of the parks, reservations, and monuments herein provided for.

"Section 5. That the director and other officers and employees of the bureau in Washington, when traveling on duty in the field, and the experts, assistants, and other employees, when away from their posts of duty in the field on official business, shall be allowed a per diem in lieu of subsistence, to be fixed by the Secretary of the Interior, exclusive of transportation and sleeping-car fares.

THE NATIONAL PARKS: A CONFERENCE.

An evidence that there is proceeding a thoughtful attempt to promote efficiency in government is found in the National Park Conference, which was recently held at the instance and under the chairmanship of the Secretary of the Interior. To this Conference, held in the Yellowstone National Park, were invited not only the superintendents of the national parks, but all other government officials having any relation to the nation's pleasure-grounds, the various concessionaires operating in the parks, principal officials of the railways that reach the parks, and, as representing organized effort to promote park efficiency, the President of the American Civic Association. Secretary Fisher had before him, therefore, experts upon the varied relations of the parks. The Forester, the Chief Geographer, the Land Office official who handles some of the national monuments, an entomological authority who had made a special study of insects that attack trees, and the army officers who act as superintendents, presented their views before the Conference. There was free and open discussion, with the asking of pertinent questions by the Secretary. The holding of such a conference of officials, those commercially interested, and a civic authority, is as unique in government practice as it is admirable in any practice.

The Facts.—The Conference developed an astonishing situation in respect to our national parks. It appeared that while we have thirteen national parks and some twenty-eight national "monuments" (the latter including, for instance, the Grand Cañon of the Colorado), authority over them is somewhat vaguely exercised by the War, Agriculture, and Interior Departments, sometimes in conflict. No official in any department is definitely charged with the control and management of the nearly six million acres set aside either for pleasure or scientific interest. No uniform policy of improvement, or of control of concessions, exists; and funds for improvement and maintenance are incidental and pitifully meager. No skilled landscape engineering advice, such as that almost universally availed of by a city of even a hundred thousand population for the logical development of its parks, has ever been used for the good of the nation's parks, which as Secretary Fisher expressed it, had, Topsy-like, "just growed." Under shifting army superintendence, engineering, and policing there is no secure continuity of administration; and in the case of the monuments, particularly those under the Forest Service, very little administration or supervision of any kind. Although it was shown that the Government yet controls, unappropriated and unreserved, over seven hundred million acres of land in twenty-six States, there is no intelligent policy of selecting such areas as should be reserved for the nation's park needs. The use and effect of ordinary means of publicity through a press agent, who has to be carried by the Interior Department as a "supervisor of publications," was shown to have been most favorable upon parks visits.

Conclusions.—As this Conference was entirely unofficial no formal action could be taken. Certain conclusions were developed, however, without action. The absolute and immediate necessity for the creation of a Federal Park Bureau, to be placed in control of all the parks, monuments, and public grounds belonging to the Federal Government, was conceded. It is in point to note that, at the instance and with the approval of the American Civic Association, Secretary Fisher's predecessor, Mr. Ballinger, had offered during the last session of the Sixtieth Congress a carefully drawn bill creating such a department. Uniformity and fairness in respect to small park concessions that are now controlled by the Interior Department are certain to come, even before the creation of a bureau. The advisability of such a rearrangement of bureaus as would bring the Forest Service, now controlling the nation's wood lots, under the Interior Department which holds title to them, was forcibly brought out by Secretary Fisher, with the concurrence of Forester Graves. The important railway officials present promised hearty co-operation in the development of low-rate transportation to the parks. Other conclusions lead to the feeling that Secretary Fisher has done a signal service to the United States in bringing about this Conference.—*N. Y. Outlook,* September 30, 1911.

SUMMER VISITORS SWARM INTO EUROPE'S PLAYGROUND.

Visitors to Switzerland are pouring into the resorts in tremendous swarms, now that the summer season has really begun. Americans are interested to find similar controversies raging as centered round the utilization of Niagara falls for power works in past years. But here in Switzerland the authorities are more strict than those on either side of Niagara.

Silvaplana, for instance, has refused a concession to a company that wanted to dam up the local lake for electrical power. Under pressure from the Swiss Scenery Preservation Society also the Government has refused permission for the erection of industrial works on the Lake of Sils.—*San Francisco Chronicle,* August 13, 1911.

ARE NATIONAL PARKS WORTH WHILE?

By J. HORACE McFARLAND.

[Extracts from President's address at Seventh Annual Convention of the American Civic Association, Washington, D. C., December 13, 1911.]

There can only be a negative reply to the query of the subject, unless it be conclusively shown that the national parks add definitely something of value to the life or the resources of the nation. Mere pride of possession cannot justify, in democratic America, the removal from development of upwards of five millions of acres of the public domain.

To establish true value, real worth-whileness, therefore, it is necessary to put the national parks on trial. Indeed, as the national parks are but a larger development of municipal, county and state parks, we may quite properly put on the stand the whole American Park idea.

. . . .

There come, increasingly in these work-filled American days, times when the tired spirit seeks a wider space for change and rest than any city, or indeed, any State, can provide. The deep forests of the Sierra call, the snow-capped peaks of the Rockies beckon. The roar of Niagara can drown the buzz of the ticker. Old Faithful's gleaming column of spray shuts off the balance sheet. El Capitan makes puny the capital of any State, or of the nation. The camp under the oaks of the Hetch-Hetchy Valley, near the ripple of the Tuolumne, restores vigor, uplifts the wearied spirit. What cathedral of man's building shows forth the power of God unto health of soul as does the Grand Cañon of the Colorado? The Glacier wonderland of the northwest gives us lessons on the building of the continent, and the giant Sequoias of the Pacific Slope teach us of our own littleness.

These national parks, then, are our larger playgrounds. Everything that the limited scope of the city park can do as quick aid to the citizen, they are ready to do more thoroughly, on a greater scale.

To the vast open spaces, the sight of great mountains, the opportunity to live a mile or more higher up they add possibilities of real life in the open just touched upon as yet, even though more than three thousand horses this year drew their owners on camping trips into the Yellowstone alone.

The national playgrounds, too, can, if they are held inviolable, preserve for us, as no minor possessions can, our unique scenic wonders, our great natural mysteries. The spouting geyser basins and marvelous hot springs of the Yellowstone, the atmospheric splendors of the Grand Cañon of the Colorado, the silver threads of the Falls of the Yosemite, the ancient homes of the cliff-dwellers of the Mesa Verde, the ice marvels of the Montana glaciers, the towering temples amid the big trees of the Sierra—how long would they last unharmed and free to all the people if the hand of the Federal Government was withdrawn from them? Ask harassed, harnessed Niagara—depending right now for its scenic life upon the will of this Congress—after, indeed, Congress alone has saved it until now from State neglect!

The nation now has, it should be said, vast and admirably handled national forests, potential with profit for all the people. But there must be no confusion between the differing functions of the forests and the parks.

The primary function of the national forests is to supply lumber. The primary function of the national parks is to maintain in healthful efficiency the lives of the people who must use that lumber. The forests are the nation's reserve woodlots. The parks are the nation's reserve for the maintenance of individual patriotism and federal solidarity. The true ideal of their maintenance does not run parallel to the making of the most timber, or the most pasturage, or the most water power.

Our national parks are young. They are yet undeveloped to any considerable extent. But one of them, the Yellowstone, is comfortably accessible. Their value to the nation is potential more than instant, simply because they are not, as a whole, yet known to our people. The nearest east of them is fifteen hundred miles west of the country's center of population in Indiana. Our people yet cross three thousand miles of salt water to see less impressive scenery, less striking wonders, less inspiring majesty in cañon, water-fall and geyser, than they have not seen at home, because the way to Europe has been made broad, comfortable and "fashionable!"

In 1910, barely two hundred thousand visitors were reported to our thirteen national parks and our twenty-eight national monuments, but all the east-bound Atlantic grayhounds were crowded to their capacity. We have not yet begun to use the national parks; we have not commenced to attract to them a share of the golden travel tide which is said to have taken from America to Europe $350,000,000 in 1910.

Indeed, we are not ready for visitors in our national parks. We have, as yet, no national park system. The parks have just happened; they are not the result of such an overlooking of the national domain as would, and ought to, result in a co-ordinated system. There is no adequately organized control of the national parks. With forty-one national parks and monuments, aggregating an area larger than two sovereign states, and containing priceless glories of scenery and wonders of nature, we do not have as efficient a provision for administration as is possessed by many a city of but fifty thousand inhabitants for its hundred or so acres! In a lamentable number of cases, the administration consists solely in the posting of a few muslin warning notices!

Nowhere in official Washington can an inquirer find an office of the national parks, or a desk devoted solely to their management. By passing around through three departments, and consulting clerks who have taken on the extra work of doing what they can for the nation's playgrounds, it is possible to come at a little information.

This is no one's fault. Uncle Sam has simply not waked up about his precious parks. He has not thrown over them the mantle of any complete legal protection—only the Yellowstone has any adequate legal status, and the Yosemite is technically a forest reserve. Selfish and greedy assaults have been made upon the parks, and it is under a legal "joker" that San Francisco is now seeking to take to herself without having in ten years shown any adequate engineering reason for the assault, nearly half of the Yosemite. Three years ago several of us combined to scotch and kill four vicious legislative snakes under which any one might have condemned at $2.50 per acre the Great Falls of the Yellowstone, or even entered upon a national cemetery for the production of electric power at the same price for the land!

Now there is light, and a determination to do as well for the nation as any little city does for itself. The Great Father of the nation, who honors us tonight by his presence, has been the unswerving friend of the nation's scenic possessions. He has consistently stood for the people's interest in Niagara; he now stands for their interest in the nation's parks.

His Secretary of the Interior, the presiding officer of the evening, has applied his great constructive ability to the national park problem. It was at his invitation that the first national park conference was held in September last. He has visited most of the parks, and, coming from a city where intensive park development has proceeded to a greater beneficence than in any other in the world, he comprehends fully the American service park idea.

There is, then, hope for the parks. The Congress will not refuse, I am sure, to enact legislation creating a bureau of national parks, to the custody of which all the nation's pearls of great price shall be entrusted. Under such a bureau, aided by a commission of national prominence and scope, I predict that there will be undertaken not only such ordering of the parks as will vastly increase their use and their usefulness, but such a survey of the land as will result in the establishment of many new national parks, before it is too late.

. . . .

Delay means but enhanced and compounded cost. With such a truly patriotic provision for the future as well as the present as would be involved in the creation of a great national park system, available to the people of the east as well as to those of the west, our federal scenic possessions would come to attract the travel of the world. Inadequate though they are now, inaccessible as they are now, unadministered as they are now, our national parks have added very definitely to the resources of our people, and are well worth while. When they shall have been given the attention that is in the minds of our President and our Secretary of the Interior, they will increase in efficiency, in beauty, in extent, and in benefits open to all the people, so that they will even more be entirely worth while.

. . . .

Niagara, never more in danger than at this moment, must eventually, if it is to be a cataract and not a catastrophe, come under the federal mantle as a national park. In no other way can America be sacred from the lasting disgrace that now threatens our most notable natural wonder. A nation that can afford a Panama Canal cannot afford a dry Niagara!

FORESTRY NOTES.

Proposed Sale of Timber in Tahoe National Forest. The Government is advertising for bids on a large body of timber on the Tahoe National Forest, in California, with an offer of terms which inaugurate an important departure from the policy of the past. About seventy-three million board feet of saw timber is offered for sale, with a 10-year period for the removal of the timber.

To protect the public, as owners, against sales at what may prove to be too low a price, it has been the policy in the past to allow no operations extending over more than five years. A plan has, however, now been devised for allowing longer operations, with a periodic revision of the stumpage rates.

At the end of the first five years of the Tahoe sale the price to be paid for the timber cut in the following five years will be determined by the prices of lumber which have ruled in the locality during the preceding year.

The Tahoe sale will call for the construction of twenty miles of railroad, which will be a common carrier and therefore decidedly beneficial to the community—another reason for making the sale which is taken into account.

That national forest timber is in increasing demand is evidenced by the fact that over eight hundred and thirty million feet were sold during the year which ended on June 30, 1911, as against less than five hundred and seventy-five million feet in the previous year. The current year is likely to show a still greater total.

Some Notes on German Forestry. During the whole of seven hundred miles of travel in Germany, never did I see a single tract of woodland neglected or one that was allowed to exist without yielding up a revenue up to the full bearing power of the soil. I saw hundreds of examples of German forestry, with practically all the species represented except maritime pine;—the kiefer of the great sandy plains of Prussia, the spruce and fir of Saxony, and the hardwoods of the Rhine, but never a single acre of wasted forest land. And the fact that much of it was on the railroad, with each its siding for swift and cheap transportation, spoke well for a quick and profitable market, with but little expense intervening between the ripe tree and the lumber mill. It was easy to realize how Germany, with a total forest area of only thirty-five million acres, gets an annual yield of four and a half billion board feet, and no less remarkable, to my mind, is the adaption of house building practice and of the industries of Germany to the needs of its forestry so that nothing is wasted. It would seem that, in the course of centuries of tree crops, the foresters and architects had gotten together to agree on the best way to use all the wood that is grown on the soil.—*American Forestry,* January, 1912.

Five States Unite to Save Forests.

One hundred and forty of the leading loggers, lumber manufacturers and forest conservation experts of Montana, Idaho, Oregon, Washington and California met at Portland, Oregon, early in December to attend the forest-fire conference of the Western Forestry and Conservation Association. The best methods of forest-fire protection, conservation of the forests and reforestation formed the central thought of the convention.

After two days devoted to hearing many excellent addresses and spirited and valuable discussions the convention adopted resolutions urging co-operation by Federal and State governments and local forestry and conservation associations for the conservation of forests of the Pacific Coast and Pacific Northwest, through proper and adequate means of prevention of forest fires, and urging each forested county to contribute its share of the expense of fire patrol and fire-fighting. Appreciation was also expressed of the Federal Forest Fire Service.—*American Forestry,* January, 1912.

First Purchase under Weeks Law.

The first purchase of land under the Weeks law, authorizing the creation of the Appalachian Forest Reserve, was authorized at a meeting of the National Forest Reservation Committee in the office of Secretary of War Stimson, chairman of the commission, on December 9th. Ten tracts of mountain land, aggregating 18,500 acres in McDowell County, North Carolina, were decided upon by the committee for purchase.—*American Forestry,* January, 1912.

Municipal Forestry.

San Diego is perhaps the first of American cities to inaugurate a great forestry enterprise in the expectation of speedily decreasing the rate of taxation and possibly of ultimately relieving the citizens of all payment of taxes for the support of the city government. The city owns seven thousand acres of land, which up to the present time has been unproductive. Forty thousand seedlings of the eucalyptus tree have been set out. The city officials expect when the forest is twenty-five years old it will yield $175 worth of timber per acre annually. That means $1,225,000 a year. With expenses deducted, this will leave a profit which will go far toward reducing the burden of taxation.—*American Forestry,* January, 1912.

Penal Institutions and Conservation. In the last few years there has been a very strong movement to get away from mediæval customs still clinging to our prison systems. The movement is gaining momentum very rapidly, and primarily it aims to get the prisoner out of the barred cell and place him under more congenial surroundings. Would not a prison nursery be a great step in this direction, getting the unfortunate inmate out in the sun and air, where he would lose his prison pallor and be more healthy and happy. The most intensive methods used in nursery work to-day could be multiplied and carried out to the extreme, thus insuring the finest kind of nursery stock.

A great deal about conservation is heard nowadays, not only forest conservation, but conservation of all kinds, in order that a rich heritage shall be left for the coming generation. The poor unfortunates who are in penal institutions have conserved nothing, not even their moral and mental faculties. Here is a way, then, that they can, in part, pay off their debts to our succeeding generations, and in so doing be vastly the better off for it themselves and to society in general.—*American Forestry,* December, 1911.

Forest Education. What is needed now in forest education is a greater number of first-class schools for the education of rangers and woodsmen. Meanwhile, the enormous field of popular education in forestry is either completely neglected or carried on in a desultory way by State or experiment station officials.—*American Forestry,* December, 1911.

Forest Service Revenues. At a banquet in Boston on November 9th, Congressman Weeks, in a speech dealing with his bill for forest preservation, declared that last year's revenue from forest lands in the Rocky Mountain district was $1,000,000 in grazing and from $4,000,000 to $5,000,000 in forestry. He prophesied that in the near future these revenues would pay the expenses of the forestry bureau of the Department of Agriculture.—*American Forestry,* December, 1911.

BOOK REVIEWS.

EDITED BY MARION RANDALL PARSONS.

"MY FIRST SUMMER IN THE SIERRA."* More than forty years ago a young Scotchman, but recently recovered from an accident that had threatened his eyesight, came to California hoping to make his way into the mountain regions, whose beauty, he had feared in his hours of darkness, might forever be hidden from him. The story of his "First Summer in the Sierra," now for the first time published, is a journal written in the solitude of the great forests, on the summits of lonely domes and peaks, or by the camp-fire with "Billy," the shepherd, and the Indian asleep near by and the dull, dingy, unpastoral flock, for whose care he was responsible, looking "like a big gray blanket in the star light." The beauty and freshness of the mountains is wonderfully reflected in this book, which seems to hold within its pages all the brightness and sunny geniality of a Sierra morning warming towards noon.

Aside from the enthusiasm for the new world opening before him which is perhaps the dominant note of the book, one is struck chiefly by Mr. Muir's strong sense of the harmony and unity of Nature. In him the wide vision of the scientist is allied with a reverent spirit that traces even from the ravages of destructive forces an ultimate working out for good, and sees in apparent death the creative power of the Lord. "One is constantly reminded of the infinite lavishness and fertility of Nature,—inexhaustible abundance amid what seems enormous waste. And yet when we look into any of her operations that lie within reach of our minds, we learn that no particle of her material is wasted or worn out. It is eternally flowing from use to use, beauty to yet higher beauty; and we soon cease to lament waste and death, and rather rejoice in the imperishable, unspendable wealth of the universe, and faithfully watch and wait the reappearance of everything that melts and fades and dies about us, feeling sure that its next appearance will be better and more beautiful than the last."

Mr. Muir's intense feeling of fellowship and kinship with the mountain world is constantly manifest. "One fancies a heart

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**My First Summer in the Sierra.* By JOHN MUIR. Houghton-Mifflin Co. 1911. With illustrations from drawings made by the author in 1869 and from photographs by Herbert W. Gleason; 354 pages. Price $2.50 net.

like our own must be beating in every crystal and cell, and we feel like stopping to speak to the plants and animals as friendly mountaineers." A friend that he especially loves to hold communion with is the Douglas squirrel. "How he scolds, and what faces he makes; all eyes, teeth, and whiskers! If he were not so comically small he would indeed be a dreadful fellow."

An unusual insight into the beauties of the common things of the wayside is not the least of the book's charm. The tracery of leaf shadows on rock surfaces, the "sun-sifted arches" of the trees, the flow of clear streams, the firelight glow on forest walls, above all the unending wonder of the cloud scenery, those "mountains of the sky" whose daily gathering and dispersal he never fails to mark,—all these are noted with as true a perception of their beauty and significance as are the rarer glories of the summit peaks.

Forty years have wrought no change in Mr. Muir's enthusiasm for the Sierra. To those of us who have been privileged to journey with him through his best-loved mountains the story of his "first summer" will bring back many a radiant day of those later summers he has shared with us, days whose wonders he has helped us read,—"days in whose light everything seems equally divine, opening a thousand windows to show us God."

M. R. P.

"The Wilderness of the Upper Yukon."* One of the most noteworthy books of the year is "The Wilderness of the Upper Yukon," by Charles Sheldon. Though the author calls it "A Hunter's Explorations for Wild Sheep," it is very much more than a mere record of hunting exploits. We quote from Theodore Roosevelt's editorial on Mr. Sheldon's work in the issue of December 9th of *The Outlook*. Mr. Roosevelt says: " . . . to the hardihood and prowess of the old-time hunter Mr. Sheldon adds the capacity of a first-class field naturalist, and also, what is just as important, the power of literary expression. Such a man can do for the lives of the wild creatures of the wooded and mountainous wilderness what John Muir has done for the physical features of the wilderness. . . . Mr. Sheldon is not only a first-class hunter and naturalist but passionately devoted to all that is beautiful in nature, and he has the literary taste and ability to etch his landscapes into his narratives, so that they give to the reader something of the feeling that he must have had when he saw them. . . . . Mr. Sheldon hunted in the tremendous Northern wilderness of snow-field and torrent . . . and

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***The Wilderness of the Upper Yukon.* By Charles Sheldon. Charles Scribner's Sons, New York. 1911. 354 pages. Price, $3.00 net.

in all the world there is no scenery grander than that which he portrays. He is no holiday hunter . . . he is as skillful and self-reliant a woodsman and mountaineer as an old-time trapper, and he always hunts alone. . . . . But the most important part of Mr. Sheldon's book is that which relates not to hunting but to natural history. No professional biologist has worked out the problems connected with these Northern mountain sheep as he has done, . . . still more notable is his description of the life history of the sheep from the standpoint of its relations with its foes—the wolf, lynx, wolverine, and war eagle. . . . In short, this volume is one of the rare volumes which should be in the library of every man who cares for stories of adventure, of every man who cares for natural history and big-game hunting, and, finally, of every man who cares to read of out-door nature in the wilderness, described with truthfulness, with power, and with charm." The book is splendidly illustrated with photographs and drawings. M. R. P.

"OLD INDIAN TRAILS." The little-known mountain region about the headwaters of the Saskatchewan and Athabasca Rivers is the country traversed by the "Old Indian Trails"* followed by Mrs. Schäffer and her companions. This chronicle of their wanderings during two summers through the heart of the Canadian Rockies is very well written, much of it in an informal, colloquial style well suited to a narrative of the trail. Some good descriptions are to be found in it, and much valuable information concerning trails and camping-places. It is much to be regretted, however, that with so new a field before her, and with the intimate knowledge of the flora of the region that her previous experience must have given her, the author chose to devote so much space to the trivial happenings incident to camp and trail life. Mt. Robson, for example, is dismissed in a paragraph, while pages are devoted to the adventures and idiosyncrasies of the horses of the outfit, matters no doubt of considerable retrospective pleasure to the writer, but of little interest to the reader. Aside from this lack of proportion, the book is most enjoyable. Large, clear type, excellent photographs, and a map add to the volume's attractiveness. The convenient adjustment of the map deserves special mention as it is so arranged that the reader can have it constantly before his eyes, a great advantage in books of this sort where frequent reference to a map adds much to one's enjoyment and comprehension of the scenes described. M. R. P.

***Old Indian Trails of the Canadian Rockies.* By MARY T. S. SCHÄFFER, G. P. Putnam's Sons, New York, 1911. 364 pages; 100 illustrations from photographs by the author and by Mary W. Adams, and a map. Price, $2.00 net.

"THE SPELL OF THE ROCKIES."* A love of solitary ramblings among the Rockies in midwinter has involved Mr. Mills in many stirring adventures during the course of his twenty years of mountain experience. The most absorbing chapters of "The Spell of the Rockies," however, are those recording not his adventures but his observations, especially those relating to the wild animals. His description of a beaver colony, the destruction of its settlement by a forest fire, and the journey of the refugees, thirty or forty strong, across country to the pond of a neighboring colony outside the fire zone, forms a most engrossing narrative. "A Rainy Day at the Stream's Source," "Racing an Avalanche," "The Forest Fire," "Insects in the Forest," and "The Estes Park Region," are subjects of other chapters. Illustrations, type, and paper are all excellent and the book stands high among the out-of-door volumes of the season.

M. R. P.

"AN EXCURSION TO THE YOSEMITE."† "Studies in the Formation of Alpine Cirques, 'Steps,' and Valley 'Treads'," is the subtitle of this monograph. The author, Mr. E. C. Andrews, of the Department of Mines, Sydney, Australia, makes a detailed study of the evidences of glacial corrosion in the Yosemite region. "The Psychological Factor in the History of the Glacial Controversy," "Topography of the Yosemite Locality," "The Mechanics of Streams," and "Yosemite Profiles," are the principal divisions of his subject. A copy of this paper is in the Le Conte Memorial Lodge Library, and visitors to the Yosemite interested in the geology of the region will find it particularly valuable in connection with their own observations on the ground.

M. R. P.

"PHOTOGRAPHING RED SNOW." One of our members, Mr. Ford A. Carpenter, Local Forecaster of the United States Weather Bureau at San Diego, has published an excellent little article entitled "Photographing 'Red Snow.'" It appeared in the *Transactions of the San Diego Society of Natural History,* Vol. I, No. 3, November, 1911, and has for a frontispiece a beautiful color print from an autochrome made on Lambert Dome.

**The Spell of the Rockies.* By ENOS A. MILLS. Houghton Mifflin Co., Boston and New York. 1911. Illustrations from photographs by the Author. 348 pages. Price, $1.75 net.

†*An Excursion to the Yosemite* (California), or Studies in the Formation of Alpine Cirques, "Steps," and Valley "Treads." By E. C. ANDREWS, B. A., Department of Mines, Sydney. Reprinted from *Journal and Proceedings of the Royal Society of New South Wales.* Vol. XLIV.

"THE MOUNTAINEER."* A noteworthy feature of the annual bulletin of The Mountaineers of Seattle is the word of greeting from some distinguished lover of the mountains which prefaces each volume. The 1909 number was greeted by John Muir, 1910 by Henry Van Dyke. The current number contains these words from the Honorable James Bryce: "It is good news to hear of the growing love of the mountains and the increasing habit of climbing and wandering among them to which the progress of your Mountaineers Society bears witness. You are fortunate in having in the States of Washington, Oregon and California by far the noblest mountain scenery in the United States. . . . As an old member of the British Alpine Club, I heartily wish you success, and can assure you that as there is nothing healthier for the body, so there is nothing more inspiring for the mind and soul than life among the mountains and communion with their spirit." E. W. Harnden contributes an interesting article on the southern Selkirks, whose exploration he began in 1910 in company with Mr. H. W. Gleason. "Notes on Mt. Adams and St. Helens," by Professor Henry Landes, the account of the Mt. Adams outing by Winona Bailey, and "The Future of the Rainier National Park" by Asahel Curtis are especially interesting articles. The illustrations, as usual, are very fine. M. R. P.

"HALLEY'S COMET AND ECLIPSE OF THE MOON." Mr. G. F. Marsh, of Lone Pine, climbed Mt. Whitney on May 23, 1910, for the purpose of viewing Halley's Comet and the total eclipse of the moon, which took place on that date. Astronomer R. G. Aitken wrote to him for particulars and published the letter he received in reply in the *Publications of the Astronomical Society of the Pacific,* Vol. XXIII, No. 138, October, 1911, page 241. The letter furnishes a very graphic description and is well worth reading.

"NORTH AMERICAN TRIFOLIUMS."† This book, a detailed study of the Genus Trifolium of North America, has been presented to our library recently by the author. It is a well-printed and profusely illustrated volume, of interest rather to the specialized student of botany than to the general reader.

***The Mountaineer,* Vol. IV, Mount Adams Number, 1911. Published by The Mountaineers, Seattle, Washington.

†*An Illustrated Key to the North American Species of Trifolium.* By LAURA FRANCES MCDERMOTT, M. S. Cunningham, Curtiss & Welch, San Francisco, April 25, 1910. 325 pages.

"MOUNTAIN CAMPFIRES."* The President of The Mountaineers, Professor E. S. Meany, has published a small volume of verses, most of which, he says in his preface, were written for his companions of the outings and read at the campfires. Those who have traveled the trails of the northern forests and climbed the peaks with Professor Meany will accord the book a double welcome, as it brings back to them the scenes of the campfires they have enjoyed together; but the verses will undoubtedly gain a wider audience and new friends wherever the charm of the mountain world is understood. M. R. P.

"CONE-BEARING TREES OF THE CALIFORNIA MOUNTAINS."† A small handbook of the conifers of the Sierra foothills and alpine regions is Mr. Chase's second venture in California mountain literature. The book is intended as a knapsack companion for trampers just beginning to take an interest in tree life. It is unfortunate that the photographic reproductions are so blurred and indistinct, for much of the book's usefulness depends upon the illustrations. A brief description of the appearance and general characteristics of the trees and a sketch of branch and cone accompanies each photograph. M. R. P.

"THE MOUNTAIN THAT WAS GOD." Admirers of that very attractive book, "The Mountain That Was God," by John H. Williams, will be glad to hear of a new and very much enlarged edition recently published. Nearly fifty additional photographs enhance the value of the new volume. Among them is a very fine portrait of John Muir. Mr. Williams promises a new book shortly, to cover the field of the lower Columbia River and its three snow peaks, Hood, St. Helens, and Adams.

"BIBLIOGRAPHY OF NATIONAL PARKS." A list of nearly four hundred magazine articles on National Parks, Reservations, and Monuments has been published by the Department of the Interior. Copies may be obtained upon application to the Department of the Interior, Washington, D. C.

**Mountain Campfires.* By EDMOND S. MEANY. Lowman & Hanford Co., Seattle, 1911. 90 pages.

†*Cone-Bearing Trees of the California Mountains.* By J. SMEATON CHASE, A. C. McClurg & Co., Chicago, 1911. 99 pages; illustrations from photographs and drawings. Price, 75 cents.

PUBLICATIONS OF THE SIERRA CLUB

No. 1.—Articles of Association, By-Laws, and List of Members.

Nos. 4 and 5.—Maps of Portions of the Sierra Nevada adjacent to the Yosemite and to Kings River, 1893.

No. 8.—Table of Elevations within the Pacific Coast, 1895, by Mark B. Kerr and R. H. Chapman.

No. 12.—Map of the Sierra Region, May, 1896.

Nos. 2, 3, 6, 7, 9, 10, 11, 13, together forming Volume I., Nos. 1-8, of the SIERRA CLUB BULLETIN.

Contents of Volume I.—Ascent of Mt. Le Conte; Address on Sierra Forest Reservation; California Outing; Crater Lake, Oregon; Diamond Hitch; Explorations North of Tuolumne River; Forest Reservations; From Fresno to Mt. Whitney, via Roaring River; From Gentry's to El Capitan and Yosemite Falls; Grand Cañon of the Tuolumne; Head-Waters of Kings River; Kern and Kings River Divide; Kings River and Mt. Whitney Trails; Knapsack Tours in the Sierra; Mt. Bernard; Mt. Tahoma; Mt. Whitney Trail; New Grove of Sequoia Gigantea; Notes on the Pine Ridge Trail; Route up Mt. Williamson; Search for a Route from the Yosemite to the Kings River Cañon; Sources of the San Joaquin; Three Days with Mt. King; Through Death Valley; Through the Tuolumne Cañon; Tramp to Mt. Lyell; Upper Sacramento in October; Notes, Correspondence, and Reports.

Nos. 14, 15, 16, 17, 18, and 19, together forming Volume II., Nos. 1-6, of the SIERRA CLUB BULLETIN.

Contents of Volume II.—Ascent of the White Mountains of New Mexico; Basin of the South Fork of the San Joaquin River; Conifers of the Pacific Slope, Parts I and II; Day with Mt. Tacoma; Early Summer Excursion to the Tuolumne Cañon and Mt. Lyell; Expedition of Prince Luigi Amedeo of Savoy to Mt. St. Elias; Explorations of the East Creek Amphitheater, from Mt. Rose to Mt. Shasta and Lower Buttes; Kaweah Group; Lava Region of Northern California; Mountain Trips: What to Take and How to Take It; Neglected Region of the Sierra; Observations on the Denudation of Vegetation—Suggested Remedy for California; On Mt. Lefroy August 3, 1896; On Mt. Lefroy August 3, 1897; Philip Stanley Abbot; Taking of Mt. Balfour; To Tehipite Valley from the Kings River Grand Cañon; Up and Down Bubbs Creek; Wanderings in the High Sierra Between Mt. King and Mt. Williamson,—Parts I and II; Woman's Trip Through the Tuolumne Cañon; Yosemite Discovery; Notes, Correspondence, and Reports.

No. 20.—Volume III., No. 1, pp. 1 to 118—Ramblings Through the High Sierra (Reprinted from "A Journal of Ramblings," privately printed in 1875); Editorial Notice; Ouzel Basin; Forestry Notes.

No. 21.—Ramblings Through the High Sierra. Same as No. 20. (Specially bound; without Editorial Notes, etc.)

No. 22.—Volume III., No. 2, pp. 119 to 188.—Lake Tahoe in Winter; Ascent of "El Yunque"; Another Paradise; Kings River Cañon Trail Notes; Ascent of "Matterhorn Peak"; Reports; Notes and Correspondence; Forestry Notes.

No. 23.—Volume III., No. 3, pp. 189 to 270.—Parks and Peaks in Colorado; The Work of the Division of Forestry in the Redwoods; The Mazamas on Mt. Jefferson; Wagon-Trips to the Sierra; The Big Basin; The Re-Afforesting of the Sierra Nevada; The Descent of Tenaya Cañon; An Ascent of Cathedral Peak; A Glimpse of the Winter Sierra; Notes and Correspondence; Forestry Notes.

No. 24.—Volume III., No. 4, pp. 271 to 339.—The Mazamas on Mt. Rainier; Lassen Buttes; From Prattville to Fall River Mills; Zonal Distribution of Trees and Shrubs in the Southern Sierra; Mt. Washington in Winter; Round About Mt. Dana; Notes and Correspondence; Forestry Notes; Reports.

No. 25.—Volume IV., No. 1, pp. 1 to 75.—Joseph Le Conte in the Sierra; El Capitan; Camp Muir in Tuolumne Meadows; The Sierra Club Outing to Tuolumne Meadows; In Tuolumne and Cathedral Cañons; The Great Spruce Forest and the Hermit Thrush; From Redding to the Snow-clad Peaks of Trinity County; Trees and Shrubs in Trinity County; Notes and Correspondence; Forestry Notes; Reports.

No. 26.—Vol. IV., No. 2, pp. 77 to 176.—Into the Heart of Cataract Cañon; My Trip to Kings River Cañon (Reprint); Conifers of the Pacific Slope, Part III; Birds of the High Mountains; Notes and Correspondence; Forestry Notes; Reports.

No. 27.—A Flora of the South Fork of Kings River from Millwood to the Head-Waters of Bubbs Creek.

No. 28.—Vol. IV., No. 3, pp. 177 to 252.—Among the Sources of the South Fork of Kings River, Part I; With the Sierra Club in Kings River Cañon; Red-and-White Peak and the Head-Waters of Fish Creek; Mt. Whitney, Whitney Creek, and the Poison Meadow Trail; A New-Year Outing in the Sierra; The Ascent of Volcano Mayon; Notes and Correspondence; Forestry Notes; Reports.

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No. 29.—Vol. IV., No. 4, pp. 253 to 323.—Among the Sources of the South Fork of Kings River, Part II; the Coast Sierra from California to Panama; Ralph Sidney Smith (In Memoriam); Climbing Mt. Brewer; Table of Elevations of Peaks in the Sierra Nevada Mountains over 12,000 feet; Kings River Outing, 1902—Botanical Notes, etc.; Near the Kern's Grand Cañon; Reports; Notes and Correspondence; Forestry Notes.

No. 30.—Vol. V., No. 1, pp. 1 to 85.—The Ascent of the North Palisades; Variations of Sierra Glaciers; How Private Burns Climbed Mt. Pinatúbo; The Hillside Farmer and the Forest; The Notable Mountaineering of the Sierra Club in 1903; On the Trail with the Sierra Club; The Completed Le Conte Memorial Lodge; Reports; Notes and Correspondence; Forestry Notes.

No. 31.—Vol. V., No. 2, pp. 87 to 152.—Mt. Whitney as a Site for a Meteorological Observatory; The Water-Ouzel at Home; The San Francisco Peaks in April; Over Harrisons Pass with Animals; The Ascent of San Antonio; Secretary's Report; Treasurer's Report; Notes and Correspondence; Forestry Notes.

No. 32.—Vol. V., No. 3, pp. 153 to 270.—First Ascent: Mt. Humphreys; Address at Memorial Exercises; Mt. Lyell and Mt. Ritter Ascents by Sierra Club Outing of 1904; A Deer's Bill of Fare; Domes and Dome Structure of the High Sierra; Some Aspects of a Sierra Club Outing; The Evolution Groups of Peaks; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 33.—Vol. V., No. 4, pp. 271 to 328.—The Grade Profile in Alpine Glacial Erosion; Systematic Asymmetry of Crest-Lines in the High Sierra of California; The Tuolumne Cañon; Inscription for the Le Conte Memorial; Over Harrisons Pass from the North with a Pack-Train; California Forestry Law; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 34.—Vol. VI., No. 1, pp. 1 to 74.—The Sierra Club's Ascent of Mt. Rainier; Mt. Rainier, Mt. Shasta, and Mt. Whitney as Sites for Meteorological Observatories; The Sky-Line of the Tatoosh Range, Mt. Rainier National Park; The Effect of the Partial Suppression of Annual Forest Fires in the Sierra Nevada Mountains; In Memoriam; Joseph Le Conte; Wild Animals of Mt. Rainier National Park; The Sierran Puffball; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

All of above are out of print, having been destroyed in the fire of April 18, 1906.

No. 35.—Vol. VI., No. 2, pp. 75 to 152.—An Ascent of the Matterhorn; The Name "Mt. Rainier"; The Second Kings River Outing; The Motion of the Nisqually Glacier, Mt. Rainier; Report on the Kings River Cañon and Vicinity; Reports; Notes and Correspondence; Book Reviews; Forestry Notes; Revised By-Laws of the Sierra Club.

No. 36.—Vol. VI., No. 3, pp. 153 to 210.—The Aftermath of a Club Outing; Along the Foothills to Lake Chabot; Mt. Rose Weather Observatory; The Ascent of Asama-Yama; Reports; Secretary's Report; Treasurer's Report; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 37.—Vol. VI., No. 4, pp. 211 to 284.—The Hetch Hetchy Valley; To Joseph Le Conte, a Poem; Lake Ramparts; The Grand Cañons of the Tuolumne and the Merced; The Water-Ouzel, a Poem; Photograph of the Water-Ouzel; Bird Life of Yosemite Park; An Easterner's Impressions of a Sierra Club Outing; Indian Pictographs in Pate Valley; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 38.—Vol. VI., No. 5, pp. 285 to 336.—William Kent's Gift; Redwoods; The Mt. Ritter Knapsack Trip; A Knapsack Trip to Mt. Ritter; The Yosemite Waters; Snowfall in the Sierra Nevada; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 39.—Vol. VII., No. 1, pp. 1 to 84.—The High Mountain Route Between Yosemite and the Kings River Cañon; With the Sierra Club in the Kern Cañon; Down the Kern-Kaweah; An August Outing in the Upper Merced Cañon; Organization of Sierra Club; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 40.—Vol. VII., No. 2, pp. 85 to 140.—Camping Above the Yosemite—A Summer Outing With the Sierra Club; From Kern Cañon to Giant Forest—The Chronicle of a Knapsack Trip; Up From "The Land of Little Rain" to the Land of Snow, Being the Journal of a Sledging Trip Up Mt. Whitney in Winter; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 41.—Vol. VII., No. 3, pp. 141 to 214.—The Observatory on Mt. Whitney; The Grand Circuit of the Yosemite National Park—Down Tenaya Cañon; On Mt. St. Helens With the Mazamas; A High Sierra Circuit on Headwaters of Kings River; Organization of the Sierra Club; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 42.—Vol. VII., No. 4, pp. 215 to 274.—Galen Clark; The Grand Cañon of the Tuolumne; Little Studies in the Yosemite Valley; The New Glacier National Park; The Ascent of Fujiyama; The Proposed Estes National Park; Winter in the High Sierra; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 43.—Vol. VIII., No. 1, pp. 1 to 86.—Cathedral Peak and the Tuolumne Meadows; Little Studies in Yosemite Valley; The Kings River Outing of 1910; A Vacation Trip to Mount Kinabalu in British North Borneo; Ascent of Red Peak; The Discovery of the Nest and Eggs of the Gray-Crowned Leucosticte; The Passing of Our Mountain Meadows; Fire and the Forest—The Theory of "Light Burning"; Organization of the Sierra Club; Reports; Notes and Correspondence; National Parks; Trout Planting; Forestry Notes; Book Reviews.

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All communications intended for publication by the SIERRA CLUB, and all correspondence concerning such publication, should be addressed to the Editor, WM. F. BADÈ, Room 402 Mills Building, San Francisco, California.

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Correspondence concerning the distribution and sale of the publications of the Club with reference to advertising rates and space location, and concerning its business generally, should be addressed to the Secretary of the Sierra Club, Room 402 Mills Building, San Francisco, California.

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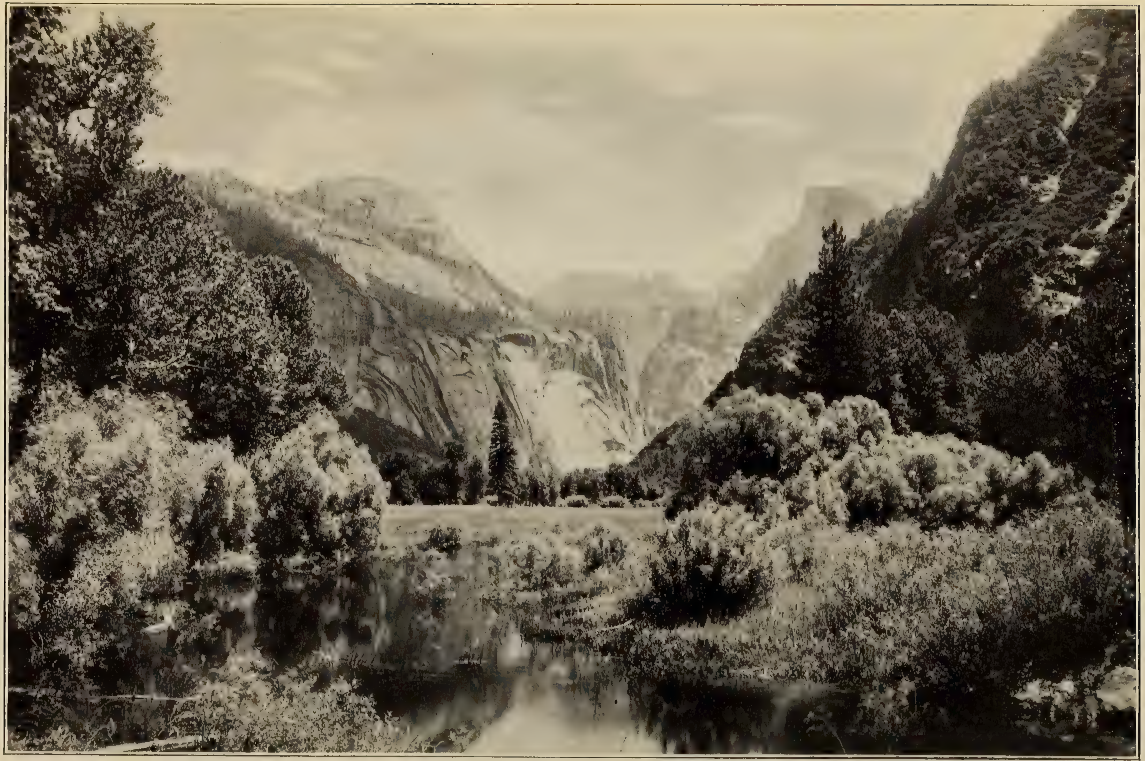


YOSEMITE VALLEY FROM ROCKY POINT.

Photograph by Pillsbury Picture Co.

SIERRA CLUB BULLETIN

VOL. VIII SAN FRANCISCO, JUNE, 1912 No. 4

A MIDWINTER TRIP THROUGH NEVADA'S MOUNTAIN PARK.

BY J. E. CHURCH, JR.

Mt. Rose, Nevada's highest peak on her western boundary, has become a household word to those who have viewed the majestic sweep of landscape from its summit, and to those who have listened to the tales of their pilgrimage. Few, however, have realized that among the snow-clad peaks which rise like gigantic gables between Mt. Rose and Lake Tahoe lie cañons and mountain valleys which, with their virgin forests and rugged parapets, equal, on a smaller scale, the famous mountain parks of Colorado.

This region had long been the dreamland of the writer, and oft in the midnight watches had he planned a knapsack trip through it. Finally, last midsummer, the dream had been realized, and some knowledge of the mountain highway through the region had been gained.

When, therefore, the study of snow conditions at high altitudes called him to the mountains, he turned instinctively to the place which had so appealed to him before.

The party was made up at this time of three, as it had been in the summer. But there were now three men—Professor Kennedy, botanist and forester; Mr. Felix H. Carssow, civil engineer, of San Francisco, and the writer, general guide and enthusiast.

The schedule of the trip embraced Washington's birthday and the days immediately succeeding, and the route was made long to cover as much territory as was possible in a trip of five days. Few provisions were taken and but one blanket apiece. The latter would insure early rising, and the former would, willy nilly, keep us up to our fast schedule. Our route, if covered, would embrace fifty miles of tramping and would bring us out at Truckee.

The party was untried. Professor Kennedy was offering himself a resolute sacrifice on the altar of science. The Californian, as we finally dubbed Mr. Carssow, was an unknown but enthusiastic quantity, to judge from his letters and his determination to have a February trip—a trip at least worth the trouble of coming so far. His enthusiasm had rather increased than diminished during a prolonged wait for sudden orders, and when the orders were sent, the Californian was quick to reach the rendezvous. He arrived at Reno late one evening on the Overland Limited, and at five o'clock next morning the party was plodding over roads made sloppy by the driving rain toward the ranch on Jones' Creek, where the active ascent was to begin. When this destination was reached the clouds still trailed their veils of vapor far down the flanks of the mountains. The day, also, was nearly half done, but the ascent to the observatory would occupy scarcely more than six hours of continuous climbing.

The air was cool and the snow compact at the beginning. The clouds seemed to open up avenues before us as we proceeded, and to close them behind us as we advanced, until we rose into a storm of snow, which gradually hemmed in our vision.

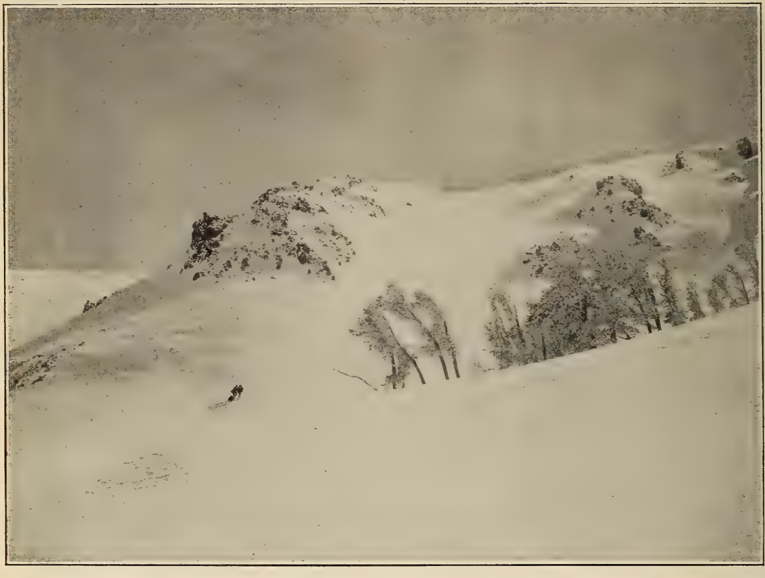
It had been a sudden transition for the Californian to rise from sea level to this wintry altitude of 8,000 feet so quickly. His heart began to labor and our progress to slacken on account of numerous halts for breath. But the advance was maintained with much grit and many a joke on mountain and tobacco hearts, until Refuge Camp at timber line was reached.

Refuge Camp, however, proved more a name than a fact, for a cold wind drove athwart the slope where it stood, and made tarrying there anything but comfortable. We, therefore, hastened upward to seek refuge from the wind under the lee of the summit.

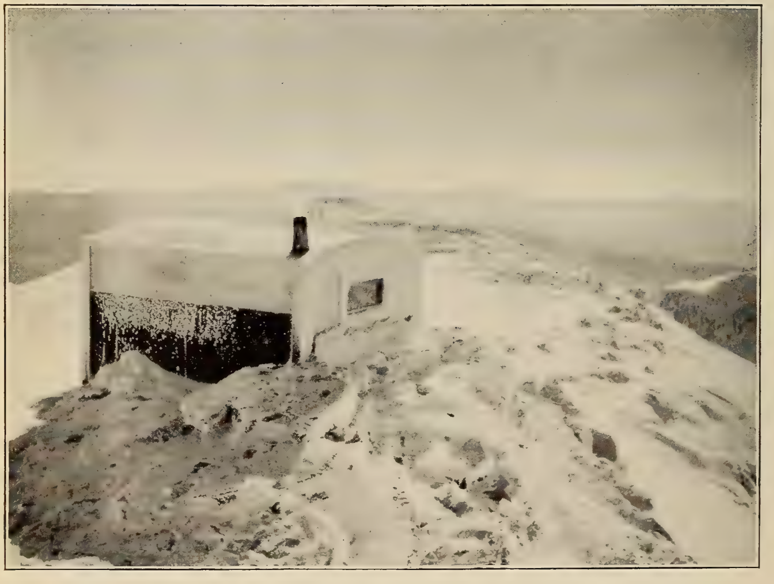
We were now an hour and a half behind time. The day was rapidly waning and at least two hours of steady climbing remained before we could hope to reach the

"PLAYED TEAM WITH STAFF FOR WHIFFLETREE."

"DOWN THE SLOPE AMID ALPINE PINES BEARING WHITE FESTOONS."
Photographs by J. E. Church, Jr.



"UP THE CAÑON SIDE, STEP BY STEP."



"CHEERIER PLACE NEVER AFFORDED MORE WELCOME RETREAT."
Photographs by J. E. Church, Jr.

observatory. Just as we were beginning to wonder even whether the observatory was still there, the clouds parted for a moment and revealed it all intact on the crest. Miniature it looked, but it was all there; monument, instrument shelter, and observatory building, each a tiny projection on the sky line. The true perspective was revealed for once in this land of exaggerated nearnesses by the walls and planes of cloud between us and our destination.

The Californian's heart was now becoming adjusted, but his muscles showed signs of extreme fatigue. As one leg rested on dead center for a moment its muscles suddenly contracted in cramp and held him stiff-legged until they could be persuaded to release their grip. Then, when this leg had obtained its second wind, so to speak, the other leg approached its crisis. The Californian met this quietly and successfully. He suddenly placed himself at ease on the snow with his stiffened leg far outstretched and handed the enthusiast his staff. "Drive this into the snow," said he, "just behind my knee. Now take my leg by the ankle and pull slowly backward." The leg yielded perforce, and when the knee had thus been thrown off center the muscles yielded obedience. The Californian was master of his mechanism once more.

Darkness overtook us just as we shaped our final course for the buttresses which stand guard on either side of the summit of the mountain. There was a moon, but its presence could not be detected save by a faint glow in the atmosphere which dispelled midnight darkness. The clouds had now attained the consistency of fog, and a fierce gale was blowing aloft. This gale we avoided by clinging close to the leeward side of the nearer buttress, whose presence we felt rather than saw. When we surmounted this barrier we were met by a fusillade of driving snow and frost crystals so fierce that we were unable to maintain our footing. Breathing in the face of such a blast became uncomfortable, and the ears and hands, that had not been covered with face masks and mittens earlier in the evening, began to suffer.

We were now not more than ten minutes distant from the observatory. The guide laid a straight course up the slope toward it, but did not find it. In fact, he discovered that he was descending rapidly from pinnacle to pinnacle, and a long, rising slope could not be found. He was playing at blind-man's buff and was being beaten at the game. The only distinguishable features were precipitous rocks on the one side of the crest and a gentler slope on the other. But these were reversed in direction. The botanist was called into consultation, while the Californian asked us if we knew at all where we were. We figured that we must be going east along the mountain crest when we should have gone west. But my brain had not turned with my feet. I was, to my best conviction, still going west, though my judgment said east. So, figuratively speaking, I took my head and turned it forcibly around. "Now, sir, this is south and that is north. Yonder, before you is west." Up again, pinnacle over pinnacle, we went, over mounds of snow, keeping close to the broken crest line of the mountain until, at the top of one last cloud-like peak a small black cube appeared. It was our destination, and cheerier place never furnished more welcome retreat. When the lamp was lit our personal appearance roused roars of merriment. In our struggle with the gale we had become covered with hoar frost until hair, eyebrows, cap—in fact, every available object on our persons—were festooned with white. The frost in fingers and ears left only a lingering soreness. We had risen to the highest part of our journey,—10,800 feet above the sea,—and now we could rest until quite ready to speed down over the slopes to Lake Tahoe, the second objective of our trip.

Next morning the fog still lay heavy around us and extended for at least a thousand feet down the mountain. The barometer was rising and the temperature was falling. A forecast of fairer weather for the next day was made and a unanimous agreement was reached to spend this day in rest and sport and to await the morrow.

But lest the weather should remain unfavorable, our course along the mountain tops was laid out on the map, and angles and distances were accurately determined in order that we might continue our trip until we could descend below the zone of storm. Waterproof leggins were also provided by the deft fingers of the Californian, and snowshoes were put in order for the six inches of snow that had recently fallen upon the crust.

Next morning dawned clear, with only a fog bank here and there, anchored in the depths of some valley. Mountain chains, valleys, lakes and rivers appeared with perfection in detail of miniatures. The towns lay in the depths below. Northward the valleys were chocolate brown with rims of white. Southward every eminence and depression was dazzling white throughout. The landscape was burdened with snow until it seemed that it could hold no more.

Equipment was cut to the minimum, except that the Californian and the botanist retained the maximum in cigars. These had been their solace the previous day and should be jettisoned last of all. The enthusiast carried his baggage on his back. The others placed theirs on the mountain sled and played team with staff for whiffletree.

Down slopes amid alpine pines, still bearing their white festoons and crystal blossoms, the party sped to the cañon floor of Galena Creek, where mountain pine and alpine hemlock grow undisturbed and hold the masses of winter snow in check. Then up the cañon-side over a staircase, slowly kicked, step by step, in the treacherous crust, the party ascended to the plateau that rose gradually to the continuous range along which lay the course to the lake.

Here began a series of disappointments for the botanist. He thought the route should be one grand, even descent, down which he could ride or at least roll all the way to the lake. While, perforce, alternating peaks and mountain saddles made a devious trail up and down, to and fro, which must be trodden to obtain the only practicable high route to State Line Point.

The night was spent high up on the flank of Rose Peak, the dominating mountain south of Mt. Rose. The situation, scenically, could not have been better, for sunset and sunrise could both be seen from our camp. Shelter, however, could scarcely have been worse, for this consisted only of two poor rows of mountain scrub, rising somewhat higher than our heads above the snow, and a slight trough in the snow excavated with the aid of our snowshoes. A few other clumps furnished boughs for bed and windbreak. An old stub afforded a few armfuls of wood. The Californian made the bed and furnished the *modus dormiendi.* Three should sleep in one bed and to keep within the limits set by the covers they should sleep like nested S's, with arms outstretched to clutch the neighbor in front. But here the botanist wavered. He did not relish close contact with the inevitably snoring Californian—that is, providing the Californian slept—and so decided to remain on guard until quite drowsy. At length he came, but the covers would not stretch and the snow was cold. So, after a futile struggle for comfort, he decided to return to the fire until midnight, and then to claim the enthusiast's place. Tedious that watch must have been. The fire had been steadily sinking into the snow, leaving a pit, up which it sent its acrid smoke and little warmth to the shivering watchman on its brink. The patience of the Scotch botanist lasted until I A. M., when his sorrows and indignation took voluble expression. The enthusiast was prompted to rise immediately, and found the botanist clinging to the walls of the pit in a vain endeavor to reach the fire and avoid the wind sweeping over the surface of the snow. The botanist retired and the enthusiast perched himself in the pit. Desperately inconvenient became his situation, even in the first quarter hour, nor did a limb jabbed into the side of the pit to keep him from falling into the fire furnish much relief. His physical wants, however, soon stirred his mind to activity. A pile of poles from the tree tops, too green for burning, lay close at hand, and of these he gradually made a grate in the pit large enough to sit on and then long enough to lie on, by kicking a cavern for his feet in the wall of the pit. Then he stretched himself on his grated bed, with back turned to the glowing embers and face to the sky, with no blanket, but with a sense of warmth exceeding that of his companions in the bed. At three the botanist was uneasy again; the new bed caught his fancy, and on it he rested until, toward morning, the fire sank into the depths of the snow.

Memorable was the day that succeeded. It began at sunrise and continued until 4:30 o'clock the next morning, when the party lay down again to rest. Variations, however, diversified the day, so that sun yielded to moon all too quickly, and the latter sank in the west like some speeding hour hand on the dial of the heavens. And all the time lay the broad expanse of Lake Tahoe before us—near and yet interminably far—its approach guarded by valleys and cornices which defied the sled and lured the toilers to loiter.

Beautiful nooks, from which long white vistas through green timber and mountain crags led the eye to wander as the body rested—great reservoirs of nature from which should come streams of springtime and fruits of summer. Into the last of these we slid and rolled to cook the second meal of the day in the bed of a rivulet that here cut its channel deeply in the snow. As we ate, large veils of mist came sailing over the mountain rim into the valley and the great forest around us grew gloomy as at twilight. The storm had returned once more.

Only a single mountain rim now intervened between us and the lake. If we must, we could tumble down this, even in the storm, and reach the water's edge. But Brockway still lay far west along the rim and down a long point that ran far out into the lake.

As we reached the summit of the rim a scene baffling description met our eyes. A fierce gale was sweeping over the lake. From our elevation of 3,000 feet above its waters the waves seemed not to rise in individual crests, but to sweep in mighty impulse across it, as when the hand of the musician sweeps across the keyboard in one crescendo of sound. Mighty masses of clouds capped the mountains on the western shore and indicated the source of the impulses. In the center of the vast rhythmic sweep, low down to the west, stretched out the sinuous point which we were seeking. The wind was now sweeping the crest where we stood, and the clouds were gathering rapidly into mountain fog around us. But the Californian and the botanist both declared with one voice that they would take the highland route along the rim. The enthusiast's proposal to camp as on the preceding night was voted down. "Too much wind and too little bedding," said the botanist. So all was made snug for a midnight trip.

The Californian was sent ahead as sentinel to keep the sledding party from plunging over the lofty cornice which here reaches extreme proportions, on account of the unobstructed sweep of the gale from the west. All progress was now dependent upon feeling and the occasional glimpse of ghostly spectres of trees and castellated rocks which from time to time marked our progress.

When clumps of trees afforded sufficient shelter, compass and map were studied under the flickering light that shone through protecting fingers. But unfortunately we had no log to reel off the distance covered and to indicate when we should swing southward to the point. Once a sudden change in the apparent direction of the wind warned the sentinel that he had lost his sense of direction and the party drew together to consult. We were at the time endeavoring to pass an enormous rock that crowded us off the mountain crest. We tried again, but again were baffled. We could not round that rock, which continued to loom above us through the fog. The botanist declared that the compass could not lie, even though we thought it did, and finally won his point.

The original route was abandoned in favor of a direct descent to the lake. Down we went, following the impulse of gravity into a gigantic funnel whose mouth narrowed

AGATE BAY FROM BROCKWAY.

IN THE HARBOR AT BROCKWAY.
Photographs by J. E. Church, Jr.

rapidly into a precipitous gorge. An impromptu race between the botanist and the enthusiast on the ski and the sled was too much for the sled. The noble old frame that had weathered a winter journey up Mt. Whitney and two winters on Mt. Rose, collapsed under the strain, and left its burden as a penance for the enthusiast to drag down the cañon and round water holes yawning through the snow.

The snow surface did not fail until the lake had almost been reached. Then packs were transferred to shoulders, and the party pitched down the sodden slope to where the waves from the recent storm were still churning against the rockbound shore.

From out the scud appeared the moon once more. We were close to the eastern base of the point, but still five miles from Brockway, and the hour of midnight was upon us. We were too wet to sleep where we were, and the bushes were wet with rain and melting snow. It would not be much worse to proceed. The botanist devised the lunch—three inches of bologna and one small orange. The remnant of rice in the provision bag was uncooked. But the lunch was ample. We had grown accustomed to small rations.

The trip to Brockway, like the storm on the lake, can scarcely be described. We did not feel it—indeed, we were too tired to sense it. The botanist was seeking a bed and we were following the botanist. Snowshoes had been cached with the other outfit, for the snow along the point seemed shallow. The trail could rarely be found. Slippery snowbrush alternated with rotten snow, knee deep, and the slope pitched sharply toward the lake. Of the botanist's leggins only the safety pins remained, while each of us was soaked upward to the waist. Words were few. From each fall the victim rose more slowly than before, and the words on his lips grew inaudible. He could have fallen asleep where he fell by merely closing his eyes. Not so the Californian, however. His eyes were growing wider open. He was feeling responsible for our arrival somewhere. So when the end of the point had at last been reached and the tedious search began through the large monolithic rocks and the manzanita for some traces of habitation, his patience exploded. "Don't you know this rock? Don't you know this tree? Don't you know this point? Don't you know where the hotel is? *Don't you know anything?*" And the botanist through sheer brain fag dreamily answered, "What hotel?" Indeed, so many were the points on the end of State Line Point that by the time all had been searched over the last remnant of the night was passing. The hotel grounds were finally found by following a fallen wire, but the Californian was fain to plunge into the barn for fear that the hotel might not be just beyond.

Round the wide hotel porch we tramped, when the botanist came to himself and readily discovered the door. Our shouts through the empty building were answered only by the roar of the surf. Everything below had been dismantled. Every stove had been deprived of a section of its pipe. Only a box of apples and some pine nuts offered a welcome. Above, the beds were intact, and into these we crept with sodden garments cast aside, content to solve the problem of putting them on again when we should awake. In this mood we fell asleep, the Californian and the botanist each with an apple at his lips.

In the waking moments following refreshing sleep we formed many plans of escape from our isolation before apprehension should be felt for our safety.

But our troubles were over. In our second search of the premises our good angel, William Williston, the keeper, was found in his quarters down the avenue, and clad in nondescript summer garments, the party was bounteously fed and entertained until it broke up the following day. The intervening time was spent on foot and in boat traversing the shores of Agate and Crystal bays, enjoying the roll of the waves. In the evening we sailed back along the scene of the previous night's wanderings to obtain the abandoned outfit. Beautiful was the distant sweep of moonlit mountains and the shadows of the overhanging shore. The only evidence of winter was the distant snow and the film of ice formed by the spray upon the boat. Otherwise it might have been a summer evening, except that the gulls had left their rookery on the western shore of the point.

Next morning the flying Meteor, snow laden, bore the Californian away on a voyage round the lake. He planned to catch a possible train from Tahoe City. The botanist and the enthusiast tramped over Mt. Pluto to Truckee. In the evening the Californian met these two again, just as the train came to speed them to their homes. He had walked from the lake to Truckee, and that in a pair of thin leather shoes. Gritty son of vigorous Russian sires, he had thrived on his hardships and grown more enthusiastic with the days.

"All was good," called he as the train drew out, "even coming down that cañon." And the botanist added, "We paid cheaply for the sights we saw."

THE MOUNTAIN BLUEBIRD AND THE WOOD PEWEE.

BY WILLIAM FREDERIC BADÈ.

With photographs by the author.

Fifty-six years ago the French historian, Jules Michelet,* published a work entitled "The Bird," which soon passed through nine or ten editions in the French language. This was followed afterwards by three other works of a similar character, entitled respectively, "The Insect," "The Ocean," and "The Mountain." They all belong to an interesting type of writing about nature, in vogue at that time, which is best described as a sentimental illustration of natural history.

One now reads with amusement the author's claim to be scientific in his observations, especially when he places Alphonse Toussenel's *Le Monde des Oiseaux, Ornithologie Passionelle* (published 1852) on a level with the works of Wilson and Audubon. Giacomelli's illustrations in "The Bird" and Percival Skelton's in "The Mountain" give away his case at a glance. Such a thing as photographic accuracy in reproducing a mountain or a bird never occurred to either of them. The illustrations of birds, unrecognizable as to genus or species, belong mostly to certain forms that had become stereotyped in ornamental marginal designs. They flutter about in vignettes and do the most unbelievable things.

In one of the first text illustrations a bird sits on the edge of a table, trying to read a page of the author's manuscript. On the last page of the book four of them sit in various attitudes on his pencil, presumably singing

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*1798-1874. Published *L'Oiseau,* 1856; *L'Insecte,* 1857; *La Mer,* 1861; *La Montagne,* 1868. The first and last are the best. Translated into English by W. H. Davenport Adams.

"finis." In "The Mountain" one looks with equal bewilderment at etchings of what purport to be well-known mountains in the Alps. They are as unreal as Gustave Doré's landscapes of the Dantean inferno. The author's descriptions of mountain scenery are interesting in themselves, but they betray unmistakably the interest and knowledge of a man who has never conquered lofty summits as a climber.

Photography has in these days become a valuable aid both to the alpinist and the ornithologist. Besides, the type of scientific interest which students of nature have cultivated since the days of Darwin calls for the kind of accuracy which photography supplies. It fails at only one point; it does not reproduce colors. At all events, the application of color-photography to birds in the wild state cannot be seriously considered at present. This seems especially unfortunate in the case of the Mountain Bluebird (*Sialia arctica,* Swainson*; *S. currucoides* of Bechstein), whose exquisite coloring makes it rank easily as the bluest and most beautiful of the gentle family of bluebirds.

Campers in the Boreal zone of the Sierra Nevada soon become acquainted with the Mountain Bluebird. Along the edges of alpine meadows and in open stands of tamarack pine, mostly at altitudes ranging from 7,000 feet upward, this bluebird rears its brood. Ridgway's description of the plumage of the male as "plain rich turquoise, cerulean or sevres blue above" holds true of most of the specimens I saw in the alpine lake region north of the

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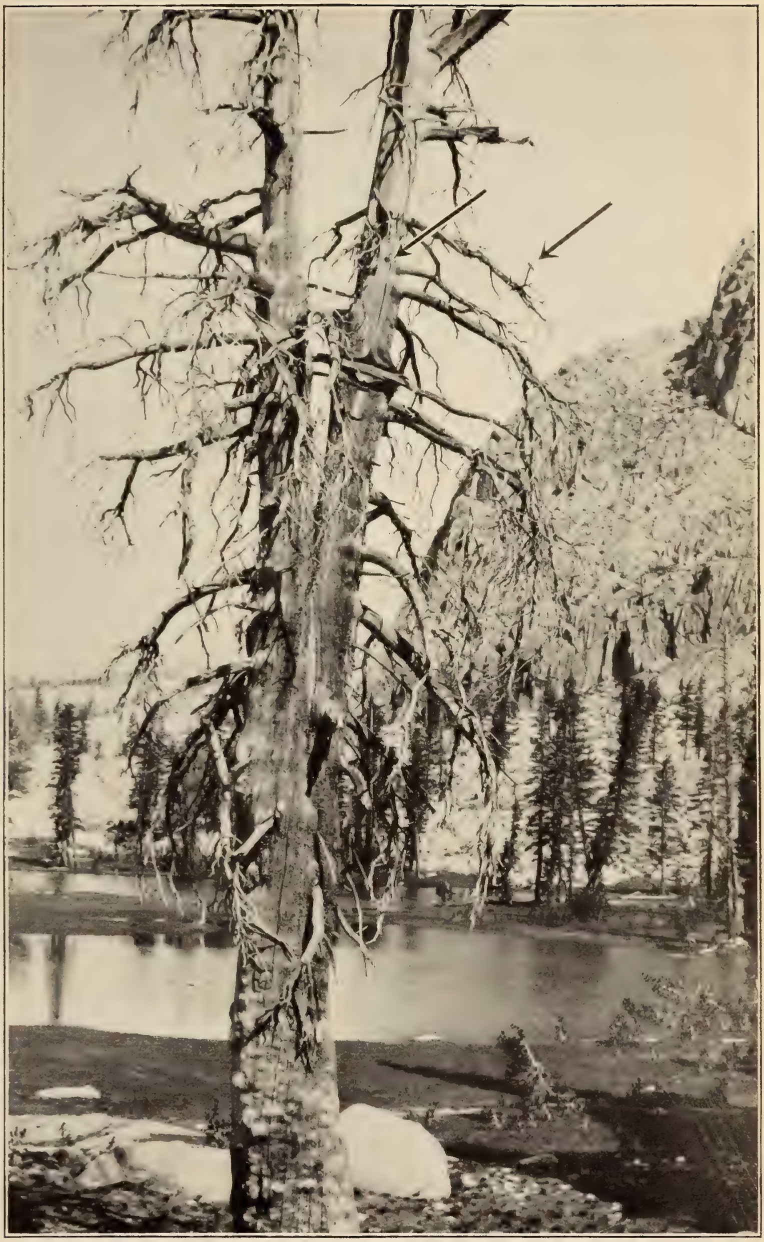
* The English naturalist, William Swainson (born 1789) was the first to describe the Mountain Bluebird from one specimen obtained in 1825 at Fort Franklin, Mackenzie. His description will be found in the Fauna Boreali-Americana (1829-37), Vol. II, 1831, Plate 39. In publishing this work he was associated with Sir John Richardson. The colored plate of the bird, being made from a dead specimen, is certainly wrong in the drawing of the head. Some give to the German naturalist and forester, J. M. Bechstein (1757-1822) the credit of having named and described the Mountain Bluebird for the first time, giving it the species name *currucoides.*

Tuolumne. The abdomen and shorter under tail-coverts of both male and female are white in summer. This fact, together with the intenser blue coloring, the absence of rufous and brown on the breast, and the somewhat larger size, serves to distinguish the Mountain Bluebird from the Western Bluebird (*Sialia mexicana occidentalis*), into whose range the habitat of the former sometimes extends. The sight of one of these bluebirds, in full summer plumage, hovering a few feet above the flowery carpet of a meadow, while hunting for grasshoppers, makes a memorable occasion.

On the 28th of July, 1911, the Sierra Club made a side trip from Kerrick Cañon to Tilden Lake. On the way thither I observed that Mountain Bluebirds were numerous along the trail. The following day I tried to locate nests in the neighborhood of our camp at the lower end of Tilden Lake. In a short time I found the homes of three pairs of these gentle mountaineers. All of them had appropriated abandoned woodpecker holes, excavated in dead or dying tamarack pines (*P. murrayana*). The altitude was 9,000 feet.

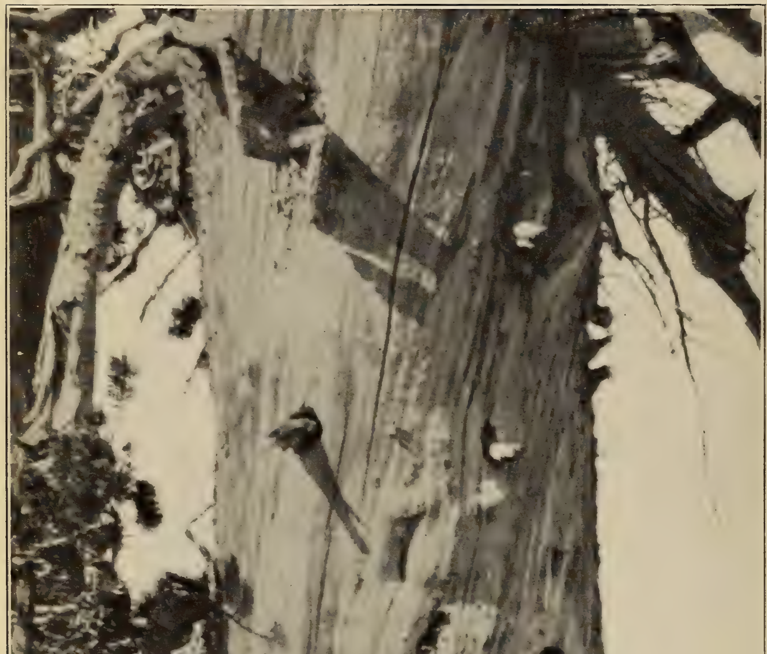
One of these nesting sites was in a large dead pine at the lower end of the lake. The opening was a considerable distance from the ground. The young must have been fairly large, for they chirped loudly during the feeding operations. I photographed the tree and its background, as shown in the accompanying cut. It affords a glimpse of what is in many ways a characteristic summer environment of the Mountain Bluebird in the Sierra Nevada: an open forest consisting almost entirely of Murray pines; an overflowed meadow in which the Bluebirds were foraging together with Clarke Nutcrackers (*Nucifraga columbiana*); patches of snow lingering in hollows and on the ridges.

The second nest was about thirty feet above the ground in a dead pine overhanging the stream that carries off the surplus waters of Tilden Lake. The third was hardly more than fifteen feet from the ground. The birds had



ENVIRONMENT OF THE MOUNTAIN BLUEBIRD—ARROWS INDICATE BIRD AND NEST-OPENING.

Photographed at Tilden Lake, July 29, 1911, by W. F. Badè.



MOUNTAIN BLUEBIRD ENTERING HIS NEST-HOLE.

Photographed by W. F. Badè, July 29, 1911, at Tilden Lake; altitude, 9,000 feet.

chosen the uppermost of three abandoned woodpecker holes, and, at the time I found them, were quite busy carrying food to their nestlings. While thus employed, I secured several photographs, one of which is reproduced with this article. In my experience the Mountain Bluebirds are a little shyer than other bluebirds. As soon as one approaches their nest, they alight near by, fly nervously from perch to perch, and utter a plaintive call note which resembles that of the Western Bluebird.

There is a great scarcity of information regarding the song of the Mountain Bluebird. Members of the Sierra Club may contribute something on this point by their observations. Minot, in the *Bulletin* of the Nuttall Ornithological Club (Vol. V, page 225), describes its song notes as less plaintive, deeper in tone, and uttered with a richer warble than that of the ordinary bluebird. Other observers describe the bird as markedly silent, or omit all reference to its notes and song.

Robert Ridgway, in his report on the Ornithology of the Fortieth Parallel (1877) calls attention, in the case of the Mountain Bluebird, to what he describes as a change of habits due to spreading civilization. He found these bluebirds nesting numerously about buildings at Salt Lake City. Had the site of the city remained in its primitive, unreclaimed state, he says, the birds would undoubtedly have been found there only during their vertical migrations, influenced by changes of climate. As Mr. Joseph Grinnell observed, in a conversation with the writer, this is not strictly to be described as a change of habits. In taking to buildings, bird-houses, or mailboxes* for a choice of nesting sites, they still are essentially exercising the habit of selecting the comforts provided by hollow trees, woodpecker holes, or crevices among rocks. Cliff-swallows, Swifts, and some Wrens have been doing the same thing. It is noteworthy, however, as Mr. Ridgway points out, that the availability of desirable nesting sites around human habitations has, in at least one instance, caused the Mountain Bluebird to forsake its alpine breeding-ground for levels at which its does not ordinarily breed.

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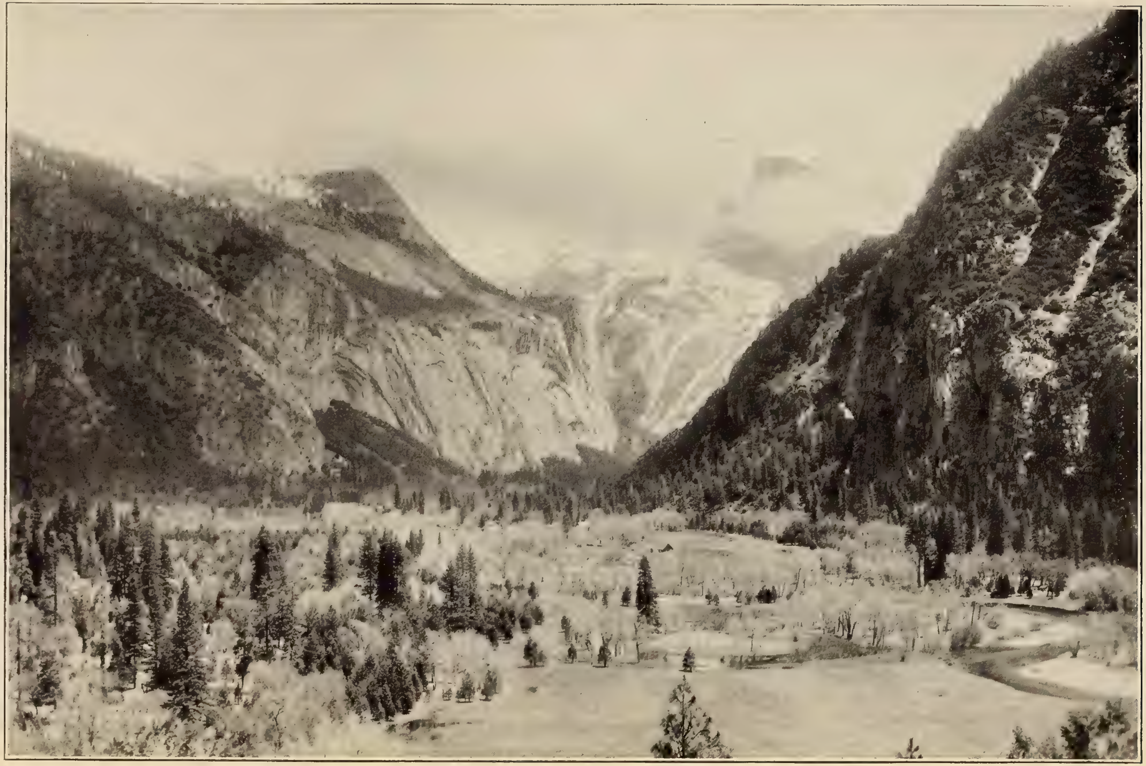
* Condor, Vol. XIV, No. 3.

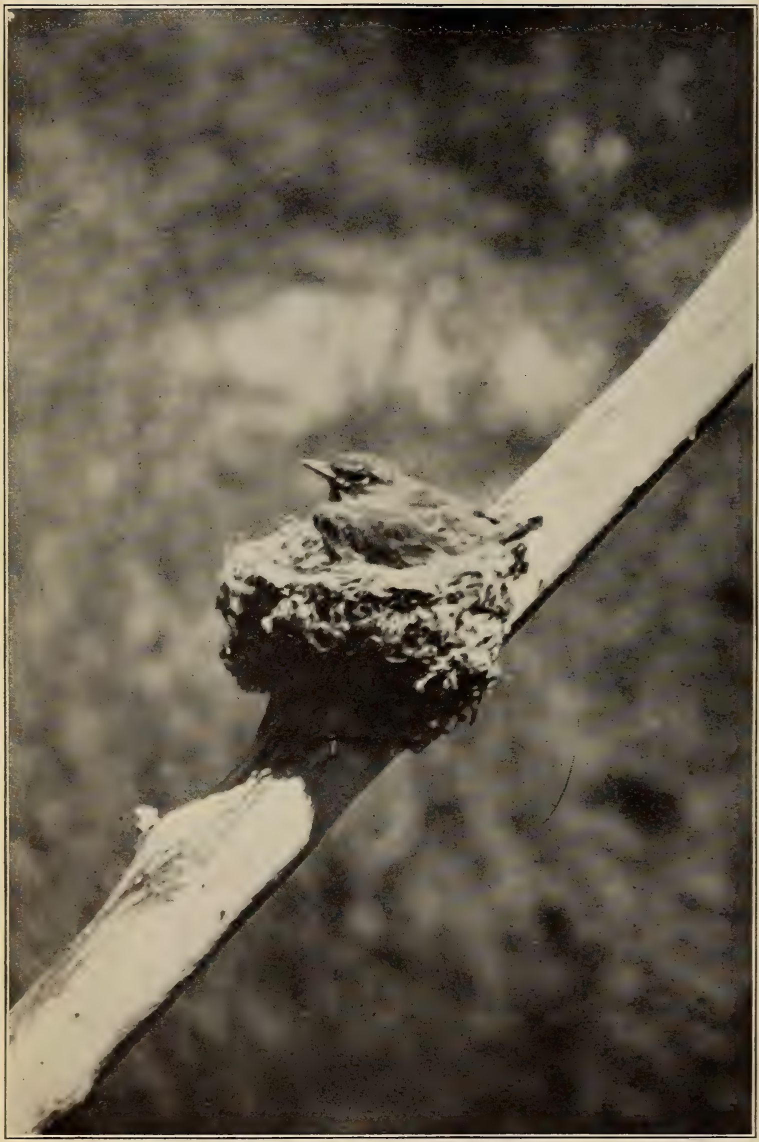
There can be no doubt that in the Sierra Nevada *Sialia arctica* is a true mountaineer. They are most abundant from an altitude of 9,000 to 11,000 feet. There one may see them, as in the accompanying photographs, conducting their housekeeping in woodpecker holes or hollow trees. There they hover, like great azure butterflies, over the luscious green of alpine meadows. And Ridgway reports that he saw them on the heights, sporting with apparent delight among the snowflakes of oncoming winter storms, when other birds were seeking shelter in cozy copses. Severe climatic changes, however, usually start them on their vertical migration to the lower valleys.

On the floor of the Hetch Hetchy Valley and in similar localities of the transition zone, up to the Murray pine meadows, the Western Wood Pewee (*Myiochanes richardsonii*) was found breeding in considerable numbers. It wears a livery of dark grayish brown above, shading on the under parts into whitish or pale yellowish, washed with dark gray. The Wood Pewee has the alert appearance and many of the actions of a small flycatcher. Its quiet call, a liquid *tweer,* uttered from its perch on the dry branch of a tree as it watches for insects, lingers long in a Sierran camper's memory of tranquil noon hours in sunny woodlands. The trout angler is apt to find the Wood Pewee's nest while casting along the banks of streams where black cottonwoods (*Populus trichocarpa*) and white alders (*Alnus rhombifolia*) stand guard against ranks of yellow pines and incense cedars. In every case I found the nest saddled on the horizontal branch of a tree, at heights varying from eight to twenty feet, and usually above the water. They were, of course, found also in other situations, but most often along the streams.



YOSEMITE VALLEY IN WINTER.

Photograph by Pillsbury Picture Co.



YOUNG WESTERN WOOD PEWEE, LAST FLEDGLING IN THE NEST.
Photographed in Hetch Hetchy, August 3, 1911, by W. F. Badè.

On August 3, 1911, Mr. Robert M. Price and I found two nests on the banks of the Tuolumne in Hetch Hetchy. The young birds were still in the nest, but sufficiently fledged to hop out and fly short distances when alarmed by our approach. Whenever one of the youngsters essayed to fly, one of the parent birds got deftly under him, while in the air, and gave him a "boost" toward a new perch. The young had well-marked brownish wing bars.

"Do you know the blackened timber—do you know that racing stream
With the raw, right-angled log-jam at the end;
And the bar of sun-warmed shingle where a man may bask and dream
To the click of shod canoe-poles round the bend?
It is there that we are going with our rods and reels and traces,
To a silent, smoky Indian that we know,—
To a couch of new-pulled hemlock with the starlight on our faces,
For the Red Gods call us out and we must go!"

—*Kipling.*

THE STEER'S HEAD FLOWER OF THE SIERRA NEVADA.

By Willis Linn Jepson.

The alpine vegetation of the Sierra Nevada includes many interesting and remarkable plants. Some of them are common at certain altitudes and with each recurring season delight the traveler on his high mountain journeys. Others are found only in a few remote localities or are rarely seen by the mountaineer. One of these rare plants is the Steer's Head Flower, known to botanists as *Dicentra uniflora* (Fig. 1.) It is a close relative of the Bleeding Heart of the gardens, which also belongs to the genus *Dicentra*.

The Steer's Head Flower as it occurs in the Sierra Nevada is known only in a few rather widely separated localities from the Yosemite Park northward to the region of Lake Tahoe and to Lassen Peak. It is a very small plant, only one and one-half to three inches high, and, except when in full flower, is so inconspicuous that it may readily be overlooked. The snow has scarcely gone from a slope before it has raised its solitary flower on a naked stalk two or three inches high; after a few days the stalks lie prostrate on the ground and the seed-pods begin to grow toward maturity. Its season of flowering is very brief and once the flowering has passed a sharp eye is needed to detect the few small finely cut leaves and the stalked seed-pod of this diminutive plant close against the brown rocky slope.

In the last days of July, while with the 1911 Outing of the Club, the writer was climbing Macomb Ridge between Tilden Lake and Stubblefield Cañon in the northeastern part of the Yosemite National Park. On this climb many Steer's Head Flowers were seen in great perfection. The altitude is about 9,400 to 9,700 feet.

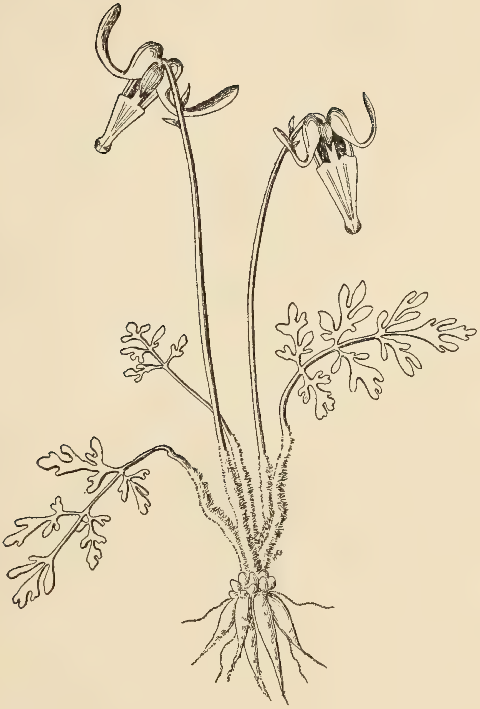


Fig 1.

STEER'S HEAD FLOWER.

One or two or perhaps several scape-like stems arise from a cluster of carrot-shaped tubers. The tubers are crowned by numerous rice-grain bulblets, which separate readily from the root-crown. The figure is natural size.

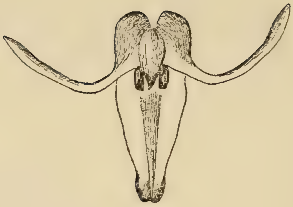


Fig. 2.

A SINGLE FLOWER OF THE STEER'S HEAD.

The horns represent the two lower petals. Between them is shown a sepal ("forelock"), the other sepal of the pair being behind and invisible in the drawing. The "snout" is formed of the upper petals, which are prolonged downward into a terminal spoon-shaped process which covers the anthers and stigma. One of the petals is behind and thus invisible in the drawing. The figure is one and one-half times natural size.

The northwesterly slopes were still covered with extensive snowfields, but about boulders the snow had melted, leaving a sort of broad crevasse-like space a foot deep between the snowfield and a boulder. In the bottom of such openings the Steer's Head raises its nodding flowers on slender stalks in such a way as to leave no doubt of the entire appropriateness of the common name. The two lower spreading petals curve out on each side from the flower and answer excellently well for a steer's horns. The two upper petals are narrowed to a snout-like process, and are notched on each side toward the base (that is at the end nearest the summit of the flower-stalk) so as to reveal the dark ovary beneath, thus furnishing "eyes" for the fairy cattle. While above the "eyes" is a sepal making a good enough forelock (Fig. 2).

This flower being perfectly bi-symmetrical, the illusion is equally satisfactory from both sides. Of the many hundred kinds of flowers which furnish fancied resemblances I believe that there are not many which are so little strained as this. The name, Steer's Head, was born in the mountaineer's brain on the instant seeing of this flower; it was never concocted after prolonged thought or deliberation.

On a sultry day when weary cattle congregate gregariously in some favored spot one may recall the apologetic lazy movement, suddenly relaxing into inertia, with which they resent the presence of an intruder who forces them to move even a few feet. On the high slopes of Macomb Ridge the fairy Steer's Heads in the crevasses, by reason of their posture, recalled suggestively the attitude of drowsy cattle half-abashed but not alarmed by an unwelcome stranger. It is a plant of curious structure, well worth searching for, and the quest of it will give zest and pleasure to mountain climbs in the neighborhood of Tower Peak or of Mt. Conness, mountain heights which lie near some of its favored habitats.

BERKELEY, CALIFORNIA, April, 1912.

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The purposes of the Club are:—"To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada Mountains."

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EDITORIALS.

THE WHYMPER BEQUEST. Members of the Sierra Club will be interested and gratified to learn that the noted British alpinist, Edward Whymper, has by his will, left the Sierra Club a bequest of £50, equivalent to about $250. Whymper, as all the world knows, made the first ascent of the Swiss Matterhorn, and was the only survivor of the fatal accident which resulted in the death of a guide and four of his fellow climbers. He had always shown a friendly interest in the Sierra Club, of which he was elected an honorary member some years ago. But no one had reason to expect that Whymper would remember the Sierra Club in his will. The gracious gift of this charming writer and famous mountaineer, one time president of the British Alpine Club, is a fine tribute to the spirit of free masonry which unites all alpinists in the bond of fraternity, and the memory of it will be passed on among the honored traditions of our Club.

The gift also calls fitting attention to something which our members have been slow to realize so far. We refer to the fact that the Sierra Club in the pursuit of its chosen purposes confers great public benefits and is therefore worthy of the financial support of those of its members and friends who are able to make gifts or bequeath legacies. The Appalachian Club has been the recipient of a number of bequests made by its members and only this past year had $1,000 left to it for a special purpose. There doubtless are many of our members who sympathize with the aims of the Club sufficiently to remember it some day in their wills. Many causes to which money or property is devised in these days are not half as worthy, or as permanent in the benefits they confer, as the objects for which the Sierra Club stands. We are in need of a large permanent fund with the income of which to carry on special work. Who will follow the example of Edward Whymper? W. F. B.

THE HETCH HETCHY SITUATION. Another postponement of the final hearing on the Hetch Hetchy grant has become necessary according to notices sent out by the Secretary of the Interior. The City Engineer's health has broken down and it has in consequence become necessary to employ other engineers to prepare the data required from the city of San Francisco by the Board of Army Engineers. Accordingly the city has been given until June 30, 1912, to file the matters it wishes to present with regard to the Modesto and Turlock irrigation districts, and also the San Joaquin, Sacramento, and McCloud sources of supply. By the 15th of July the city "is to file its comprehensive plans as to the proposed use and development of the Hetch Hetchy and Lake Eleanor valleys and watersheds, including the proposed sanitary restrictions, and all supporting evidence as to the feasibility of these restrictions." By the first of August all the supplementary data required by the Board of Army Engineers must be presented. All the various documents filed by the city are to be available for examination by objectors, who are given until the first of October for any replies they may wish to make. The city is then given an additional thirty days to meet any points that have been raised. The date of the hearing, therefore, is expected to fall some time during the month of November.

W. F. B.

THE SODA SPRINGS PURCHASE. With the acquisition of the Soda Springs property in the Tuolumne Meadows, Yosemite National Park, in the interest of the Sierra Club, the Club has entered a new sphere of activity. For many years the Appalachian Club and other similar organizations have owned tracts of land which for scenic reasons or exceptional forestral conditions were preserved and administered in the public interest. The need for the ownership by our Club of similar tracts in California has not been as great, owing to the wisdom and foresight of the Government in permanently reserving and setting aside as National and State parks large areas of land containing such natural wonders.

However, in the Yosemite National Park, in the Tuolumne Meadows, near the source of the Tuolumne River, there exists a privately owned tract, the only one in that vicinity, which includes the famous soda springs. Club members have long been familiar with this delightful place. Joseph Le Conte, in writing of his first trip there in 1872, said:

"The Tuolumne Meadow is a beautiful grassy plain of great extent, thickly enameled with flowers, and surrounded with the most magnificent scenery. Soda Springs is situated on the northern margin of the meadow. It consists of several springs of ice-cold water . . . pungent and delightful to the taste. To anyone wishing really to enjoy camp-life among the High Sierra, I know of no place more delightful than Soda Springs. Being about nine thousand feet above the sea, the air is deliciously cool and bracing. The water, whether of the spring or of the river, is almost ice-cold, and the former a gentle tonic. The scenery is nowhere more glorious."

Mr. John Muir, in 'My First Summer in the Sierra," writes that the Tuolumne Meadows region "is the most spacious and delightful high pleasure ground I have yet seen."

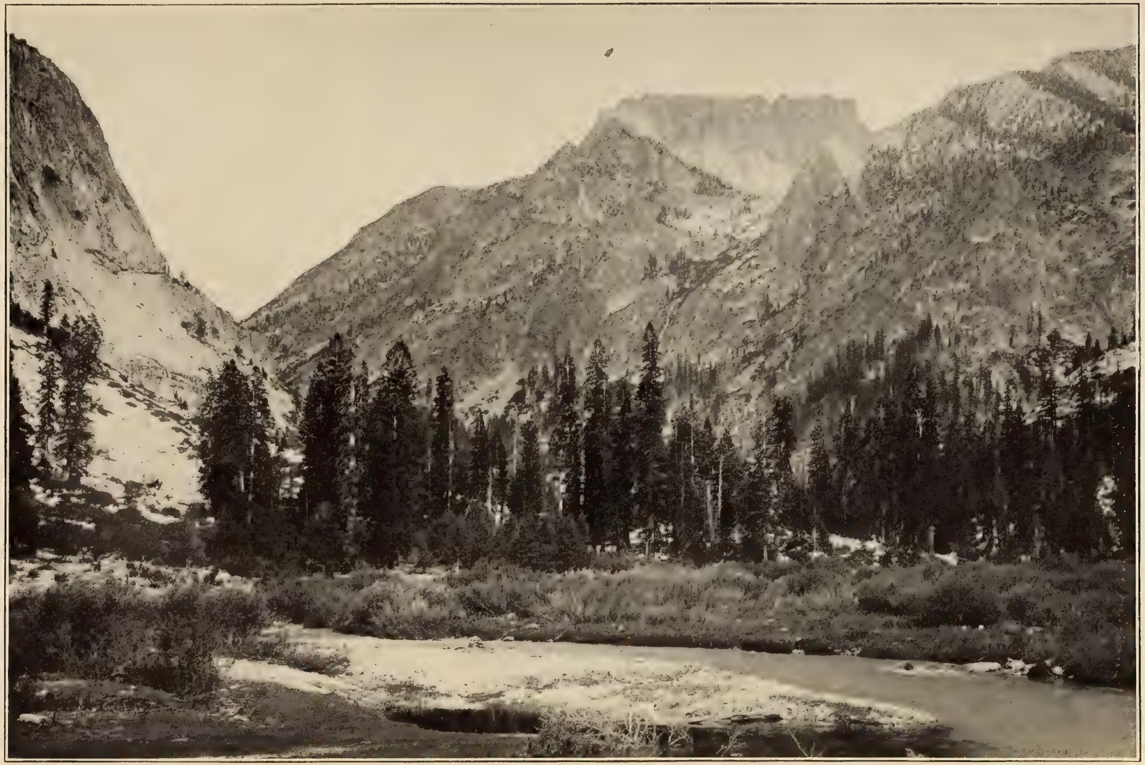
It is the consensus of opinion that there is no single place in the High Sierra better fitted as a site for a Sierra Club Lodge. It is only twenty miles by the new Mirror-Tenaya Lake Trail from Yosemite Valley and from no other center can so many interesting trips be made. Mts. Lyell, Ritter, Dana, Conness and many other high peaks, innumerable charming lakes for which the High Sierra is famous, as well as the wonderful falls and cascades and water-wheels and sculptured cliffs and walls of the Grand Cañon of the Tuolumne are all within comparatively easy reach.

The Tioga Mining Road will undoubtedly be acquired by the Government and repaired in the near future. This road crosses one corner of the property in question and connects with the new State highway, recently built up from the Mono Lake region. When completed this will become one of the most famous scenic trips in the world. It should be open to automobiles and with a short branch road one would be able to run to the foot of Mt. Lyell and but a short distance from its glacier.

Learning that this property was on the market, with every likelihood of being sold and perhaps enclosed, so that the public would be excluded, some of the directors of the Club secured an option on it and presented to the members a plan of purchasing it by private subscription. The generous response to this proposal has made it possible to effect the purchase and the property will be acquired in the name of the Club, which will hold it in trust for the subscribers and administer it for the benefit of the Club members with the public welfare in view. This plan has met with the unqualified approval of Lieutenant-Colonel Benson, former superintendent, and Major W. W. Forsyth, acting superintendent of the Yosemite National Park. It will insure a wise administration of the property and prevent its being commercialized by private owners. A large, substantial cabin already exists on the property and this can temporarily be used as a headquarters. We hope that in time the Club can place some one in charge of the property during the summer months and that some sort of lodging can be provided and staple provisions placed on sale, so that Club members and others can leave Yosemite Valley with the knowledge that there will be a place in the Meadows where they can secure essentials. It is to be hoped that the Club will take over the property in time and build a substantial lodge there. Members could be provided with lockers and have other advantages that would make the plan most desirable. It would also aid in solving a perplexing question growing out of our inability to accommodate an increasing number of applicants for our annual Outings.

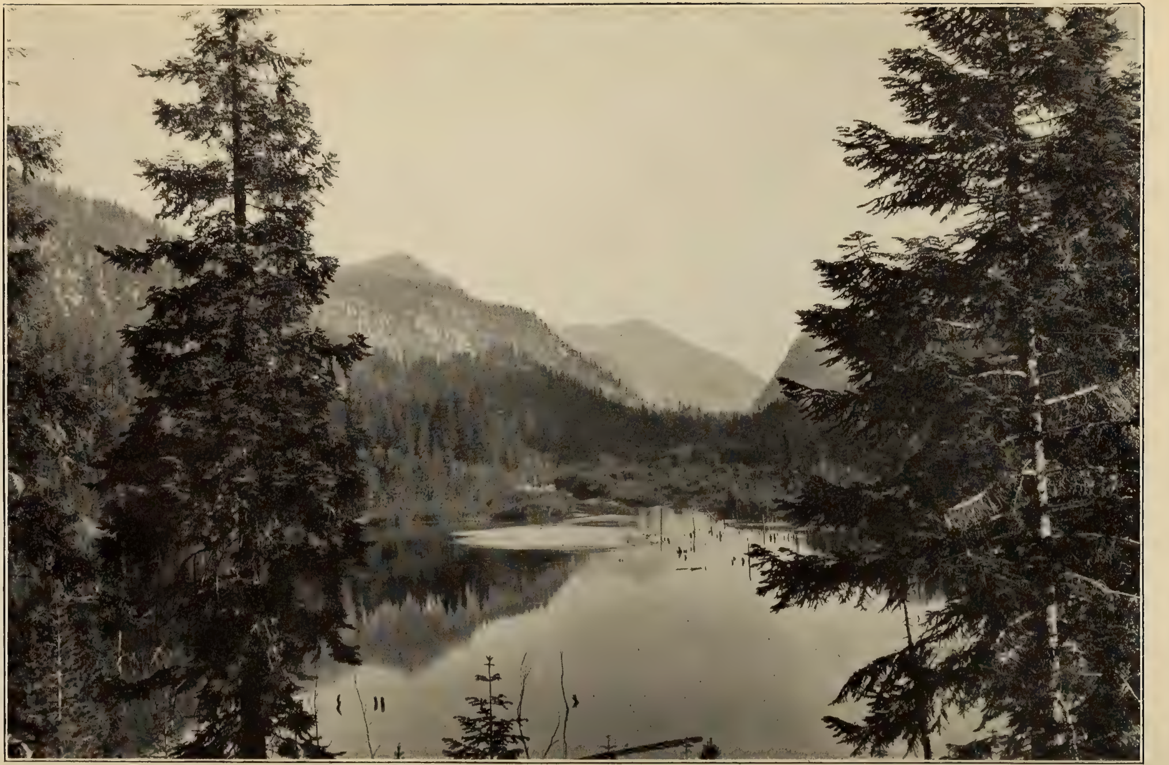
The Club is deeply indebted to those members who have advanced the funds necessary for this purchase and is doubly grateful to those who have given their subscriptions to the Club outright.

W. E. C.



WEST VIDETTE FROM JUNCTION MEADOW—BUBB'S CREEK, KINGS RIVER.

Photograph by J. N. Le Conte.



LOOKING UP KERN RIVER CAÑON—KERN LAKE IN FOREGROUND.

Photograph by Sadie Bixby.

REPORTS.

REPORT OF THE SECRETARY.

May 6, 1911, to May 4, 1912.

It is a genuine pleasure to make a report on the condition of the Sierra Club for the past year, for it has been marked by a steady increase of membership and the Club's influence is becoming noticeably greater. The Treasurer's report indicates a larger balance than ever before, which is fortunate in view of increased expenditures. The total membership of the Club is now 1,527, making a net increase for the year of 127.

The accumulation of books and exchanges and especially the growing stock of back numbers of the Sierra Club Bulletin have made it necessary to rent additional space adjoining the present office, in which to store these possessions.

The Club conducted a vigorous campaign early in 1912, with the object of securing an increased appropriation for the Yosemite National Park, in order to make adequate preparation for the accommodation of visitors during the exposition year, 1915. The boards of trade, chambers of commerce, and other organizations throughout the State co-operated most actively. Unfortunately, the desire of both political parties in Congress to make a record for economy may operate to keep the appropriation for the next fiscal year down to $50,000, which is the amount regularly appropriated for some time past and which might have been reduced were it not for this concerted effort to secure a larger appropriation. This amount is more than three times as much as was appropriated under the State régime, however.

A Bureau of National Parks, or, more properly, a National Park Service, to take charge of all such matters as appropriations, creation of new parks, extension or alteration of boundaries of existing parks is a matter of pressing necessity. The inclusion of the Kings-Kern region, and other similar areas in national parks, are questions which will probably be left for such a bureau to determine, and it is to be hoped that Congress will without delay pass the pending bill providing for such a service.

The acquisition of the Soda Springs property in the Tuolumne Meadows marks a distinct step forward in the Club's history. This has been commented on editorially in this issue.

The Southern California Section of the Club has evidently been organized on a permanent basis and is conducting a series of well-attended and enjoyable walks and excursions. The Local Walks about the bay region have also proved more attractive than ever, if one may judge by the increased attendance.

The 1912 Outing to the Kern River region promises to be one of the finest trips the Club has ever taken. The full number was secured at an early date, and many had to be refused who applied late. While the plans for the 1913 Outing are only tentative, the trip as outlined is most attractive, including as it does in its itinerary the Kings River Cañon, Simpson and Grouse Meadows, and Tehipite Valley.

Respectfully submitted,

WM. E. COLBY, *Secretary.*

REPORT OF THE TREASURER.

MAY 6, 1911, TO MAY 4, 1912.

TO THE DIRECTORS OF THE SIERRA CLUB:

Gentlemen: I submit the following report of the finances of the Sierra Club for the year ending May 4, 1912:—

GENERAL FUND.

Receipts.

Total cash on hand May 6, 1911		$1,988.26
Cash received from Wm. E. Colby, Secretary:		
Dues	$3,865.00	
Advertisements	825.00	
Rent of Club Rooms	130.00	
Sale of BULLETINS	18.99	
Sale of Club Pins	22.00	
Refund of Appalachian postage advanced.	115.06	
Interest on savings deposits	40.20	
Total receipts		5,016.25
		$7,004.51

Expenditures.

Publication of BULLETINS, Vol. VIII, Nos. 2 and 3	$1,449.45
Salary of regular attendant for twelve months	600.00
Rent of Rooms 402 and 403, Mills Building	510.00
Stamps and stationery, general correspondence	466.83
Stamps for and mailing of BULLETINS	355.00
Advertising expenses	248.75
Expenses connected with Le Conte Lodge	173.60
Equipment and running expenses of office	168.27
Printing of circulars, notices, etc.	138.75
Telephone service	72.05
Carried forward	$4,192.70

Brought forward		$4,192.70
Accessions to the library		38.00
Purchase of Club pins		28.95
National Park promotion		21.10
Expenses on account of Soda Springs purchase		18.55
Local walks		10.70
Telegrams and telephones		5.75
Express		3.15
Taxes		1.17
Incidentals		10.05
Total expenditures		$4,320.12
Cash on hand May 4, 1912—		
On deposit First National Bank	$1,658.93	
In the Savings and Loan Society	341.56	
In the Security Savings Bank	647.02	
In the Secretary's drawer (cash)	36.88	
Total		$2,684.39
		$7,004.51

PERMANENT FUND.

On deposit in Security Savings Bank, May 6, 1911	$ 892.41
Interest accumulated during year	34.34
New Life Memberships during year	100.00
Total on deposit in Security Savings Bank	$1,026.75

NOTES AND CORRESPONDENCE.

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comments and suggestions on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, fish, forests, trails, geology, botany, etc., of the mountains, will be acceptable.

The office of the Sierra Club is Room 402 Mills Building, San Francisco, where all Club members are welcome, and where all the maps, photographs, and other records of the Club are kept.

The Club would like to secure additional copies of those numbers of the SIERRA CLUB BULLETIN *which are noted on the back of the cover of this number as being out of print, and we hope any member having extra copies will send them to the Secretary.*

A LETTER FROM SIR MARTIN CONWAY.

ALLINGTON CASTLE, MAIDSTONE, ENGLAND,
17 April, 1912.

THE EDITOR OF THE SIERRA CLUB BULLETIN.

Dear Sir: I should like to tell you how much pleasure I get from the SIERRA CLUB BULLETIN, which, through the kindness of your members, I am permitted to receive every time. Unfortunately I am unable to do anything for the Club which has done me the honor to number me within its ranks; I wish I could. I never fail to read the accounts of your annual Outings and they make me long to take part in them and to share the splendid glory of your scenery and the evident happiness of your glad companionship. No longer able to make mountain ascents myself, I delight to read about them. . . . The Sierra Club seems to me to preserve much of the old spirit which was in alpine climbers in the days when climbing was a fresh thing. I like to think of your camping parties in the great forest valleys and on their vast, far-seeing slopes. I like to think of the great trout fattening in the streams you have stocked. I like to think of all the good you are doing and trying to do in forest conservation. Perhaps, even yet, some day, I may be able to come hobbling after one of your summer camping parties, and may see the great trees, and the wonderful valleys, and some of the other glorious sights of your far-western world. Anyhow, I may always see them in my mind's eye with the help of the excellent photographs which your journal so admirably reproduces. Yours faithfully,

MARTIN CONWAY.

[Sir Martin Conway, in 1898, surveyed and explored the Bolivian Andes, ascending, among other peaks, Sorata (21,500 feet) and Aconcagua (23,080 feet). He also explored the glaciers of Tierra del Fuego and the interior of Spitzbergen. He has made notable ascents in the Himalayas, and has embodied his experiences in a number of standard works on exploration and mountaineering.—EDITOR.]

NIAGARA FALLS PRESERVED AGAIN.

March 29, 1912.

DEAR MEMBER: We have good news to tell you. Another victory for Niagara Falls is won. Only yesterday, March 28th, final and decisive action was taken by both Houses of Congress to extend the Burton Bill until March 4, 1913. It is temporary relief, but another victory for the American Civic Association and gives us reason to believe that within the year legislation will be effected that will permanently insure the same protection for the falls that has been in effect for the past six years. We are starting definite constructive work on this permanent legislation at once.

The fight for the preservation of Niagara has been a most tedious and wearing one. We have had to contend with powerful interests, backed by unlimited capital and supported by many lobbyists. A vast amount of work and much heavy expense has been involved. Thousands of letters have been sent to members and other friends all over the country, asking them to appeal to their representatives in Congress for favorable action. It has been necessary for the secretary to spend many of his days at the Capitol when he has been needed at his office, but the emergency was before us and we have met it. Altogether, Niagara has been an absorbing subject for the thought and persistent work of the association for more than a year. It is due to those efforts that the demands for the power companies for more water, regardless of the damage to the falls, have been denied by Congress. Too much praise cannot be given to Senator Theodore E. Burton, who has been the steadfast friend of the falls for years.

It is a pleasure to convey to you, right now, such good news. A full report of our Niagara effort is to be sent to every member very shortly, but we want you to know at this time that we have again been successful.

The large body of American people believe that the glories of Niagara are not to be dissipated for commercial purposes, but preserved for the enjoyment of the people, of not only this country, but of the world. Very truly yours,

J. HORACE MCFARLAND, *President.*
WILLIAM B. HOWLAND, *Treasurer.*
RICHARD B. WATROUS, *Secretary.*
American Civic Association.

THE COLORADO MOUNTAIN CLUB.

"To unite the energy, interests and knowledge of the students, explorers and lovers of the mountains of Colorado; to collect and disseminate information regarding the Rocky Mountains in behalf of science, literature, art and recreation; to stimulate public interest in our mountain area; to encourage the preservation of forests, flowers and natural scenery; and to render readily accessible the alpine attractions of this region."

DENVER, COLORADO, May 31, 1912.

WILLIAM E. COLBY,
Secretary, The Sierra Club,
402 Mills Bldg., San Francisco, Cal.

My Dear Sir: The Colorado Mountain Club, as this heading indicates, is now organized and doing business. We so far have about fifty members and there is every prospect that we will have several hundred before the summer is over.

We appreciate very much the assistance given us by the Sierra Club and have very greatly modeled the Club along the suggestions derived from your organization, the Appalachian Club, the Alpine Club of Canada, the Mazama Club, and the Mountaineers. Our membership is made up of two classes—qualified and associate. It is a requisite for the former that the applicant shall have climbed a Colorado peak exceeding 14,000 feet in height or one of the minor peaks approved by the Board of Directors; of these there are now Arapahoe, James and Audubon. Our first open meeting consists of a lecture by Enos Mills, to be held next Monday, and our first outing occurred yesterday. We have a number of ambitious plans on in the way of publications, trail-making, etc., and will appreciate very much co-operating with you and corresponding with you.

We are anxious to exchange lecturers with you whenever possible, and with this and other objects in view, I would be glad to see any of the members or officers of your Club when they are here.

Very sincerely yours,
JAMES GRAFTON ROGERS, *President.*

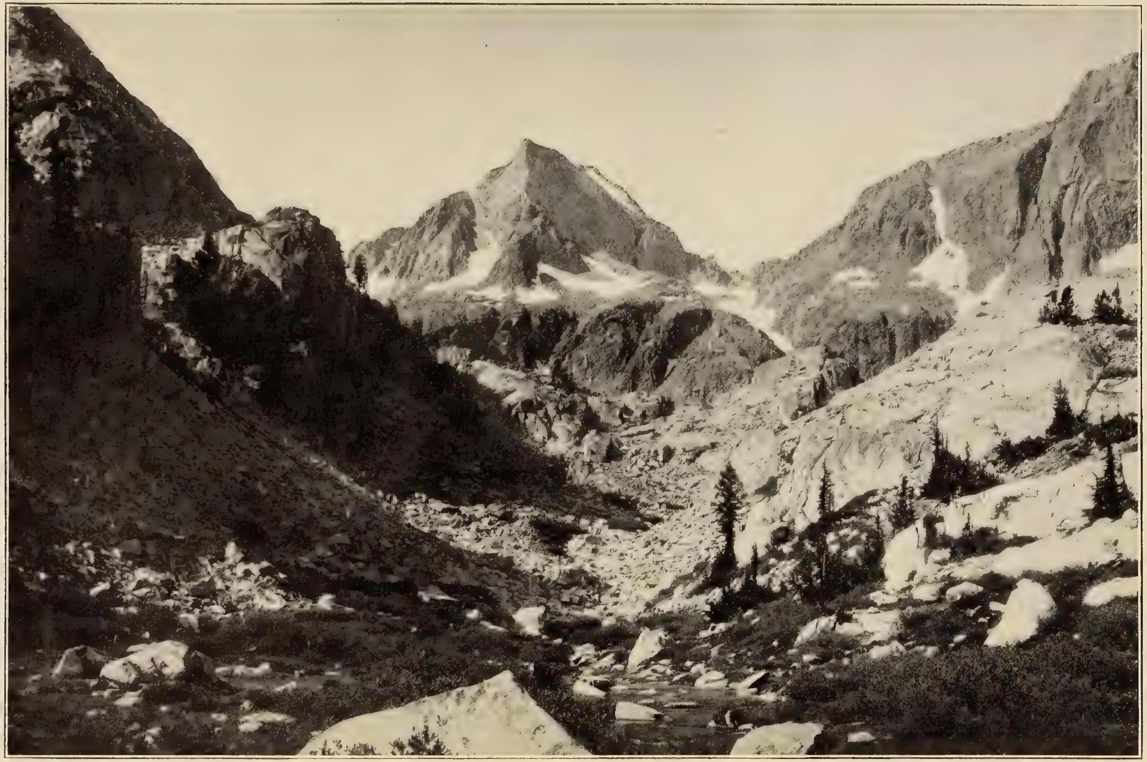
[We welcome the Colorado Mountain Club into the field of alpine clubs and wish it all success.—EDITORS.]

BUREAU OF NATIONAL PARKS.

May 2, 1912.

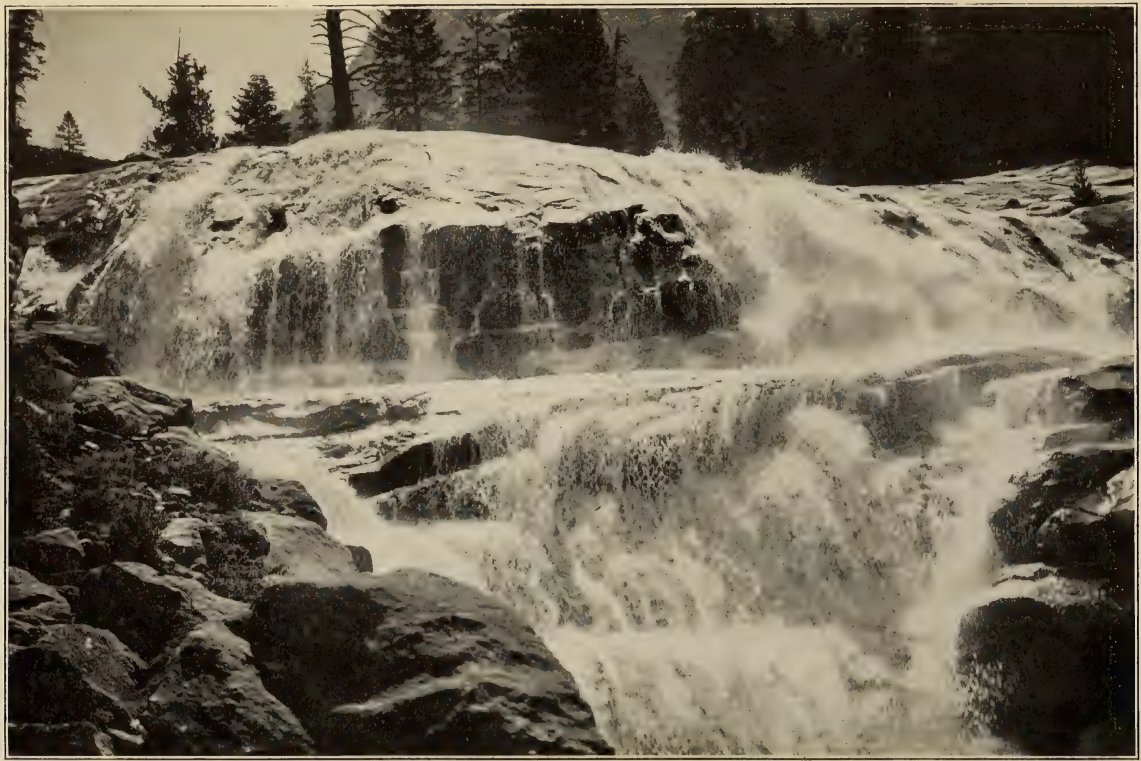
HON. WM. D. STEPHENS,
House of Representatives.

DEAR MR. STEPHENS: Reference is made to your letter of April 27th regarding the proposal to enlarge the Sequoia National Park. In my opinion the bill as it stands is unwise. If this



OBSERVATION PEAK, MIDDLE FORK OF KINGS RIVER.

Photograph by J. N. Le Conte.



FALLS ON BUBB'S CREEK, KINGS RIVER.
Photograph by J. N. Le Conte.

addition were made with the proposed boundaries, there would be an unfortunate effect on the industrial development of this section of the country. The action would result in tying up over four billion feet of timber in the Sequoia National Forest and a large amount of timber also in the Sierra and Kern national forests. It is my understanding that a great deal of opposition has developed against this proposal among the local residents, particularly among the stockmen, who are now enjoying grazing permits in the national forests involving nearly five thousand head of stock.

It is my decided judgment that the question of the enlargement of the Sequoia National Park should be deferred until the establishment of a Bureau of National Parks and the development of a definite policy in regard to the areas which should be included in the parks and the principles governing the establishment of the boundary lines. I am a very earnest advocate of national parks and believe that we should eventually have many more than at present. I feel, however, that in establishing the parks there should be some consistent policy in regard to what classes of land should be included. The parks should certainly comprise such areas of timber land as are essential for park purposes, but should not, in my judgment, include great bodies of commercial timber which should be cut and utilized as they come to maturity. It would be very unfortunate to include such areas in parks, because ultimately the conditions would require their utilization, and it would then be necessary either to exclude them from the parks or to give authority to cut them in the parks. This last action would be very unfortunate, as it would inevitably lead to a more or less commercializing of the resources of the parks, to which I am greatly opposed. The parks should be administered purely from the standpoint of their usefulness as recreation grounds and not for commercial use of their resources.

I must, therefore, express my earnest opinion that this proposal, as well as other proposals for the creation of new parks, be deferred until the question of the permanent administration of all the national parks is definitely settled and an opportunity is granted to develop consistent policies of management.

Very sincerely yours,
(Signed) H. S. GRAVES, *Forester.*

[Published by permission of the Forester.—EDITORS.]

NATIONAL PARKS.

Bureau of National Parks.

(From the President's Message to Congress, February 2, 1912.)

"I earnestly recommend the establishment of a Bureau of National Parks. Such legislation is essential to the proper management of those wondrous manifestations of nature, so startling and so beautiful that everyone recognizes the obligations of the Government to preserve them for the edification and recreation of the people. The Yellowstone Park, the Yosemite, the Grand Cañon of the Colorado, the Glacier National Park, and the Mount Rainier National Park and others furnish appropriate instances. In only one case have we made anything like adequate preparation for the use of a park by the public. That case is the Yellowstone National Park. Every consideration of patriotism and the love of nature and of beauty and of art requires us to expend money enough to bring all these natural wonders within easy reach of our people. The first step in that direction is the establishment of a responsible bureau, which shall take upon itself the burden of supervising the parks and of making recommendations as to the best method of improving their accessibility and usefulness."

Address of President Taft at the Meeting of the American Civic Association, at the New Willard, Washington, D. C., December 13, 1911.

Ladies and Gentlemen: It costs a good deal of money to run a government, and the first ambition of anyone responsible for a government is economy—at least it ought to be. Therefore, the proposition to add a bureau or a department sends goose flesh all over the body of anyone who has any sort of responsibility in respect to the finances of the government, for it means another nucleus for the increase of governmental expenses. Yet a modern government, in order to be what it ought to be, must spend money. Utility involves expense.

Now, we have in the United States a great many natural wonders, and, in that lazy way we have in our government of first taking up one thing and then another, we have set aside a number of national parks, of forest reservations, covering what ought to be national parks, and what are called "national monuments."

We have said to ourselves "Those cannot get away. We have surrounded them by a law which makes them necessarily government property forever and we will wait in our own good time to make them useful as parks to the people of the country. Since the Interior Department is the 'lumber room' of the government, into which we put everything that we don't know how to classify and don't know what to do with, we will just put them under the Secretary of the Interior." That is the condition of the national parks to-day.

Those of you who have first been in the Yellowstone Park and admired its beauties and thought of the ability of the army engineers to construct such roads as there are there, and then have gone on to the Yosemite and have seen its beauties and found the roads not quite so good, and then have gone to the Grand Cañon and found a place where you could bury the Yellowstone Park and the Yosemite and never know that they were there, and found no roads at all, except a railroad that was built at great expense and probably at great loss to the side of the cañon, and only a trail called the "Bright Angel Trail" down into the cañon, down which they would not let me go because they were afraid the mules could not carry me,—you will understand that something needs to be done in respect to those parks if we all are to enjoy them.

I am in favor of equality of opportunity, and I resent an exclusion from the enjoyment of the wonders of the world that it only needs a little money to remove.

Now the course that was taken in respect to the Yellowstone Park ought to be taken in respect to all of our parks. If we are going to have national parks, we ought to make them available to the people, and we ought to build the roads, expensive as they may be, in order that those parks may become what they are intended to be when Congress creates them. And we cannot do that, we cannot carry them on effectively, unless we have a bureau which is itself distinctly charged with the responsibility for their management and for their building up.

When the Secretary of the Interior, therefore, asked me to come here and told me the subject of the meeting to-night, I was glad to come. It is going to add to the expense of the Interior Department, and it is going to swell those estimates, but it is essential that we should use what the Lord has given us in this way, and make it available for all the people. We have the money. It is not going to take enough to exhaust the treasury. It is a proper expense, a necessary expense. Let us have the bureau.

A NATIONAL PARK SERVICE.

CONGRESS CONSIDERING A BILL TO CREATE A FEDERAL BUREAU OF PARKS —ENDORSED BY PRESIDENT TAFT AND SECRETARY OF THE INTERIOR FISHER.

A bill "to establish a Bureau of National Parks, and for other purposes," is now with the Committee on Public Lands in the Senate. A hearing on this bill is to be had at an early date. The purpose of this bill is to bring about a larger use of and to give a business-like administration to all national parks and the numerous scenic reservations of the Government.

At the head of this bureau would be a director, with experts and assistants, who, under the direction of the Secretary of the Interior, shall "have the supervision, management and control of the several national parks, national monuments, the Hot Springs reservation in the State of Arkansas, lands reserved or acquired by the United States because of their historical associations and such other national parks, national monuments or national reservations of like character as may hereafter be created or authorized by Congress."

At present there are forty-one of these reservations. These places are almost without roads, hence the scenery within them can be enjoyed by only a few people. It is pointed out that if these parks be given a business-like administration and roads built through them, that not only would Americans, but Europeans, visit them annually by the thousands, and thus cause their resources to produce millions of dollars annually.

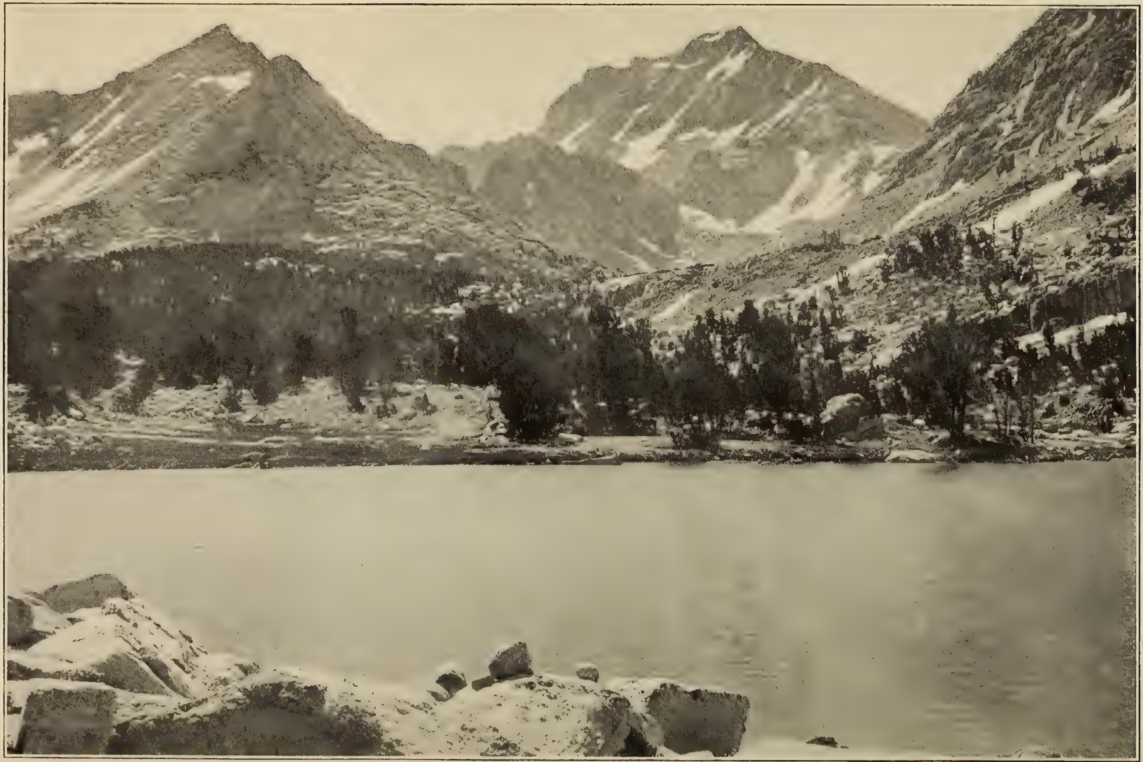
Up to date no plan has been made for the development or care of these places. Their administration is scattered through three departments of the Government. As a result, these areas are supervised, or neglected, by oft-changed administrators, who are busy with other matters. Both President Taft and Secretary Fisher have strongly endorsed the creation of this park bureau. In a special message to Congress February 3d, President Taft said:

"I earnestly recommend the establishment of a Bureau of National Parks. Such legislation is essential to the proper management of those wondrous manifestations of nature, so startling and so beautiful that every one recognizes the obligations of the Government to preserve them for the edification and recreation of the people."

In a recent address endorsing the establishment of a bureau, Secretary Fisher said:

"We ought to have some sort of central authority, a bureau, which might act, not for one of the parks alone, but for all of them."

YOSEMITE FALLS—WINTER.
Photograph by Pillsbury Picture Co.



UNIVERSITY PEAK FROM BULLFROG LAKE, HEADWATERS OF KINGS RIVER.

Photograph by J. N. Le Conte.

Senator Smoot, who introduced the bill, says that each of these national parks would become an exhaustless gold mine if their wonders were made accessible to the public. The American Civic Association has shown an especial interest in this matter, and as President J. Horace McFarland of the association pointed out, the preservation of the scenic places in America is doubly important. They will develop a love of country, and, if used as places of recreation, will increase the health and efficiency of the people. Both the Sierra Club of California and the Appalachian Club of Boston have endorsed this measure.—*American Civic Association Press Clipping Sheet.*

A BILL AFFECTING THE YOSEMITE NATIONAL PARK.

At a recent meeting of the Board of Directors of the Sierra Club the following resolution was unanimously adopted:

"Resolved, That the Sierra Club is strongly opposed to H. R. Bill No. 21,954, providing for a change in the western boundary of the Yosemite National Park and the exclusion from the park of nearly 50,000 acres which is an essential part of this great wonderland, containing as it does splendid forests, meadows and streams and admirably adapted to camping, especially for those who are traveling by way of the Tioga Road and the trails which lead to the famous Tuolumne Meadow region. This whole situation was carefully canvassed and the present boundary determined after due deliberation by the commission specially appointed for that very purpose, and to alter the boundary as now proposed would be in our opinion a grievous mistake; and the Secretary of this Club is instructed to communicate this resolution to our Senators and Representatives in Congress and urge them to oppose any change in the boundaries and to request that in lieu thereof legislation be enacted whereby the present private holdings within the park may be acquired by an exchange for public lands or timber situated without the present park boundaries.

The following is a summary of reasons for retaining in the Yosemite Park the area of over fifty thousand acres proposed to be eliminated by H. R. Bill No. 21,954:

1. Because this area contains some of the finest specimens of coniferous trees to be found anywhere in the world. John Muir, who is strongly opposed to the elimination of this area, says of this very land that its noble forest is made up of two silver firs and the yellow and sugar pines, "which here seem to reach their highest pitch of beauty and grandeur. . . . Here, indeed, is the tree-lover's paradise. The dullest eye in the world must surely be quickened by such trees as these." (See "My First Summer in the Sierra," by John Muir, pp. 123-142.) Some of the forest area is included in private holdings, but much of it is still

public land and should be preserved as an example of the very best types of these forests that exist. It is important to preserve this strip of wonderful forest in a national park, since there is no other place where it can be done so appropriately.

2. The area in question contains many fine meadows, already used by campers, and will as time goes on be used more extensively by those desiring to reach the eastern portion of the park.

3. Many miles of the Tioga road, which is the key to the wonderful scenic region in the eastern part of the park, lies in the area proposed to be eliminated. The Government is now taking steps to acquire this road and when repaired thousands of persons will travel over it and must camp along the road on the way. It is vital that these camp-grounds and streams and forests should be kept in the park, as they are essential to its proper enjoyment and administration.

Forest Harmony.

The harmony of sentiment between the cattle men and the Forest service, as shown in yesterday's meeting, is distinctly encouraging. Essentially the two interests are the same, but it is not always that this fact has been so cordially realized. The forests cannot long be used unless they are protected, and it would not be practicable to protect them permanently unless they were used. The old unregulated use of the forests was already rapidly destroying itself, when it was stopped. The trees were being burned up and over-grazing was reducing the pasturage to nothingness. There was not enough for all, and nobody had any very effective title to what he held, if someone else with a rifle chose to dispute it. The use of the forest was destruction and the law of the forest was anarchy. Such a situation could not have lasted much longer, and it would not have helped the forest-users if it had. They needed protection against themselves and each other as much as the forest needed protection against them. Then came the Forest Service to meet an emergency situation, and it met it rather ruthlessly, at first, by emergency methods. There was nothing else to do. The forest had to be preserved for future use, even at the cost of interrupting its present use. It is easier to stop things than to regulate them, and in the beginning some things were stopped which the more fully organized service later on found it possible again to permit. The era of total prohibition could no more have been permanent than the preceding era of unregulated abuse. The Forest Service must justify itself by results and prohibition is not a result. This was recognized in theory by the Forest Service from the beginning, and has been realized in practice as rapidly as the means of carrying it out could be provided. Now it has reached the point that the forest protectors and the forest users can work together in mutual harmony for mutual benefit.

The only difficult problem remaining is that of the tourists, and steps were taken yesterday looking to a more effective management of that. The forests belong to all the people, not merely to the few who are privileged to graze cattle in them, and they must be made accessible to all the people who care to travel in them. There are no roads and no merchants in the High Sierras. The only possible way to travel in them is by saddle-horses and pack-animals, and these animals cannot carry their own food. No feed is for sale in the forest. Unless the animals can find forage, travel in the forests is impossible. And they should have this forage as a right, not as a courtesy. Where one must depend on courtesy, he is at the mercy of any person who chooses to be discourteous. And in the wilderness, where there are neither police nor spectators, unsupported human nature is not unanimously courteous. It is therefore necessary to have authority and collective action to establish rights. This fact is now recognized on all sides, and it is a distinct step forward to have it embodied in formal action.—*Fresno Republican editorial, January* 30, 1912.

FEED FOR TOURIST PARTIES TO BE PROVIDED—SUPERVISOR TELLS OF WORK.

Following an address by Forest Supervisor Paul G. Redington, the cattlemen at their annual meeting here yesterday voted to co-operate with the Government in making the forests more attractive to tourists. The meeting voted to assess each cattleman using the reserve three cents a head on his stock to fence off "tourist pastures" and to improve trails. Two of the meadows will be established this coming year, one at Dinkey and the other back on Big Creek. As approximately 10,000 cattle are admitted to the reserve, the assessment will amount to $300. The Forestry Service will contribute a like sum.—*Fresno Republican, January* 30, 1912.

[We are glad to note Mr. Redington's progressive stand and the generous action which has resulted from his suggestion.—EDITORS.]

YOSEMITE TIMBER LANDS.

AN ACT

To authorize the Secretary of the Interior to secure for the United States title to patented lands in the Yosemite National Park, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior for the purpose of eliminating private holdings within the Yosemite National Park and the preservation intact of the natural timber along the roads in the scenic portions of the park, both on patented and park lands, is hereby empowered, in his discretion, to obtain for the United States the complete title to any or all of the lands held in private ownership within the boundaries of said park, by the exchange of decayed or matured timber, that can be removed from such parts of the park as will not affect the scenic beauty thereof, for lands of equal value held in private ownership therein, and also, in his discretion, to exchange for timber standing near the public roads on patented lands timber of equal value on park lands in other parts of the park.

SEC. 2. That the value of patented lands within the park offered in exchange, and the value of the timber on park lands proposed to be given in exchange for such patented lands, shall be ascertained in such manner as the Secretary of the Interior may, in his discretion, direct, and all expenses incident to ascertaining such values shall be paid by the owners of said patented lands, and such owners shall, before any exchange is effective, furnish the Secretary of the Interior evidence satisfactory to him of title to the patented lands offered in exchange, and if the value of the timber on park lands exceeds the value of the patented lands deeded to the Government in the exchange such excess shall be paid to the Secretary of the Interior by the owners of the patented lands before any of the timber is removed from the park, and may be used by said Secretary in the management, improvement, and protection of the park. The same course shall be pursued in relation to exchange for timber standing near public roads on patented lands for timber to be exchanged on park lands: *Provided,* That the lands conveyed to the Government under this act shall become a part of the Yosemite National Park.

SEC. 3. That all timber must be cut and removed from the park under regulations to be prescribed by the Secretary of the Interior, and any damage which may result to the roads or any part of the park in consequence of the cutting and removal of the timber from the reservation shall be borne by the owners of the patented lands, and bonds satisfactory to the Secretary of the Interior must be given for the payment of such damages, if any, as shall be determined by the Secretary of the Interior.

Sec. 4. That the Secretary of the Interior may also sell and permit the removal of such matured or dead or down timber as he may deem necessary or advisable for the protection or improvement of the park, and the proceeds derived therefrom shall be expended under his direction in the management, improvement, and protection of the park.

[This bill has passed both Houses and has been signed by the President. The object to be accomplished is unquestionably good, but it opens the door to possible injury which could result if its terms are not wisely carried out.—Editors.]

NATIONAL PARK RESERVES IN SWITZERLAND.

The national park idea is now quite well under way in Switzerland, where late last season the Federal Council took the action necessary to establish the park in the Val Cluosa. This, which has already been noted during its discussion, is a natural preserve for wild animals and flowers, and it is now for a term of years to be protected. The original park, bounded by four great peaks which serve for cornerposts, included a territory of about ten miles to a side. To-day the sentiment has broadened so that it is proposed to preserve much country of the same kind about it. These projects have been accomplished by mutual agreements of the communes that are to run for twenty-five years. It is pointed out, however, that this arrangement is rather dangerous in its shortness, and there is an attempt to bring the communes together again in an agreement that shall make this a protected country for ninety-nine years. The risk that is run in the present agreement is that the forests which are included in the district and the protection will have increased in twenty-five years to an extent, and this increase may at the end of the short term cause one or more of the communes to end the agreement. It is obviously better to arrange for the growth of the forests for the longer time, when it will be of real consequence.

In the Jura Mountains there is the proposition to create a park, "The Gruyère," on the plateau between Saignelégier and Tramelan. It is to be protected so that the wild creatures and flowers will have the opportunity to increase in numbers.—*"The Mountaineer," Boston Evening Transcript, May* 18, 1912.

FORESTRY NOTES.

Fire-Warning Publicity Campaign. Another and greater effort to interest the public in the matter of care with fires in the woods is being made by the Forest Service this year and to that end the "annual publicity campaign" inaugurated in 1910 is being greatly extended. This year the campaign was started with a news item giving the facts connected with the first fire. The story was sent to about three hundred and fifty papers in the district.

The names of ministers, automobile clubs, automobile accessories dealers, gun clubs, dealers in sporting goods, women's clubs, summer resorts, representative citizens, school teachers, and country stores in and adjacent to the national forests have been secured and letters written them. With the letters to country stores, placards bearing "The Six Rules" were enclosed and the storekeepers were requested to post them conspicuously in the stores. With the other letters a supply of the cards bearing "The Six Rules" on the one side and extracts from the State fish and game laws on the other were enclosed for distribution to the public. Requests for additional cards were invited. Postal cards bearing "The Six Rules" were sent to postmasters in and near the forests, with requests that they be posted conspicuously in the offices. About three thousand of the small cards are being sent to each County Clerk in the State for distribution to the public with the hunting licenses sold. In all, 9,550 communications have been sent out and 40,400 cards distributed. Requests for over 50,000 additional Fire Rule-Game Law cards are now in the office and will be answered as soon as a new supply of the cards can be obtained.

Turpentine Experiments. Experiments carried on in 1910 and 1911 on the Sierra National Forest and in 1911 on the Lassen National Forest indicate that a good grade of turpentine can be distilled from the resin of western yellow pine. The experiments are being continued on the Sierra (near Northfork) for the purpose of determining the total length of the season of resin flow, the effect upon yield of different heights of streaks, the effect of chipping at intervals of three and five days instead of seven days, the effect upon yield of shielding faces from sun and wind with canvas aprons, the rate of flow between chippings. It is planned to complete this work by August 15th. Manufacturers of turpentine are greatly interested because of the approaching shortage of resin from Southern pines.

Pole-Treating Plant. At North Bloomfield, on the Tahoe National Forest, the Service is experimenting with the Boucherie process for the preservation of timber. By this process the sapwood is filled with a water solution of copper sulphate or other antiseptic salt while still in a green condition, the liquid being forced into the unpeeled logs by hydrostatic pressure. Four species—western yellow pine, lodgepole pine, white fir and Douglas fir—will be used. This work was started in May with western yellow pine and white fir poles varying in diameter from four to ten inches and in length from twenty to twenty-three feet. It has been determined that these species yield readily to the treatment, the time required being from two to five days. The points which will be determined are effect of daily temperature, season of cutting, and seasoning upon rate of absorption; effect of water storage of poles for varying periods upon subsequent treatment; effect of varying solution pressures at point of application.

Sequoia Gigantea Seedlings. The Forest Service is raising several acres of big-tree seedlings on the Tahoe National Forest in California, at a more northerly point than any natural big-tree grove. While the giant sequoias are found in the forests of the Sierras at various points throughout a total range of some 250 miles, in the northern two-thirds of this range there is practically no natural reproduction. It has consequently been a question whether the species would not practically disappear from this region when the present mature trees die.

The most northern existing grove of big trees is on the Tahoe Forest, but about thirty-four miles southeast of the site selected for planting. This site is on a moist flat not far from Nevada City, and is about 2,700 feet above sea-level. The first seeding was done in the fall of 1910, with very successful results, and last fall an additional area was seeded.

Settlement of Forest Area Being Encouraged. The Forest Service of California has listed 1,504 homesteads upon forest reserves in this State since the passage of the act of Congress of June 11, 1906, which provides for giving homes to settlers upon tracts susceptible to cultivation. The settlement of areas that can be cultivated is encouraged, and the criticism that the Government withholds settlement that sometimes is heard emanates from those who have been unsuccessful in locating valuable timber lands. More than 1,200 such applications have been rejected.

DISTILLATION EXPERIMENTS. A study of the volatile oils from the needles of various American conifers has been started by the Forest Service. A still has been installed at North Bloomfield, California, on the Tahoe National Forest, for the purpose of extracting the oils from the leaves of various western conifers. These oils will be studied to determine their value for various commercial purposes.

STATE LEADS IN WATER-POWER DEVELOPMENT. California leads all other districts in the amount of water power developed under permit from the Government. Of the aggregate 1,383,066 horse-power, which is comprised in 165 plants, 62 plants, developing 1,026,438 horse-power, are located in California.

FORESTERS WILL BEGIN COUNTING STATE'S TREES. The Government will soon begin taking stock of its timber resources, and about 500,000 acres in California will be mapped and estimated this season under the direction of the Forest Service.

The work will be continued each season until 27,000,000 acres of national forests have been cruised. This summer's work will be confined to the Klamath, Lassen, Plumas, Tahoe and Sierra forests.

Students of Stanford, the University of California and Eastern colleges will be employed under the supervision of local forest officers. The data, when compiled, will show the aggregate assets of the Government's timber resources.

BOOK REVIEWS.

EDITED BY MARION RANDALL PARSONS.

"THE YOSEMITE."[*] A new book by Mr. Muir brings to his Sierra Club friends much of that feeling of joyful anticipation with which we enter upon an outing into the High Sierra. From its pages we are sure to gain a sense of actual contact with the mountain world. We are sure to find in it passages that with a few simple words will bring some forgotten mountain picture flashing back to memory with all its first glory renewed. This is particularly true of his recent volume, "The Yosemite." It is a treasure-house of wonderful pictures of all the changing phases of the Yosemite year—of floodtime, with "rejoicing flood waterfalls chanting together in jubilee dress"; of Indian summer, and the "brooding, changeful days" that come between it and winter, "when the leaf colors have grown dim and the clouds come and go among the cliffs like living creatures looking for work"; of "the sunbeams streaming through the snowy High Sierra passes"; of "the sublime darkness of storm nights, when all the lights are out."

Mr. Muir's ten years' residence in the valley brought him many remarkable experiences. He witnessed the effects of the successive shocks of the great Inyo earthquake, and confirmed the theory he had formed as to the origin of earthquake taluses by the actual formation of one before his eyes. He saw the valley in flood, when more than a hundred new waterfalls poured over the cliffs. He crept behind Yosemite Fall when its waters were blown out from the cliff by the wind, only to be caught there by a returning gust and pelted with "a dash of spent comets, thin and harmless-looking in the distance, but feeling desperately solid and stony when they struck my shoulders."

A chapter of particular interest, and one which abounds in passages of uncommon beauty, is that devoted to "Ancient Yosemite Glaciers": "Water rivers work openly where people dwell, and so does the rain, and the sea, thundering on all the shores of the world; and the universal ocean of air, though invisible, speaks aloud in a thousand voices and explains its modes of working and its power. But glaciers, back in their white solitudes, work apart from men, exerting their tremendous energies in silence and darkness." Scientists we have in abundance, and poets in lesser measure, but it is a rare faculty indeed that can make a chapter on geology read like the noblest poetry.

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[*] *The Yosemite.* By JOHN MUIR. The Century Co. 1912. 284 pages. Price, $2.40 net; postage, 16 cents.

The book is the fruit of long experience and loving, earnest, unwearying study. We who belong to a "time-poor" generation that counts its mountain experience by days instead of years, must indeed be thankful that the "long, bright-day and bright-night walks . . . when like river and ocean currents time flowed undivided, uncounted," were the portion of one who had so wonderful a power to make their glory live.

M. R. P.

"Note on the Exploration and the Geography of the Northern Selkirks."[*]

The Secretary of the American Alpine Club, Mr. Howard Palmer, has presented to the Club library a reprint of a most interesting paper on a little known region of the northern Selkirks. The country described is included in the great bend made by the Columbia River as it swings from its northern course to the southeast. A short account of the early exploration of the region precedes the narrative of the author's own expeditions. The fine photographs give an idea of the wild grandeur of this portion of the Selkirk Range and the difficulties it presents to the explorer.

M. R. P.

"Photographing Flowers and Trees and Decorative Photography."[†]

This volume by Mr. McFarland will be greatly appreciated by our more ambitious photographers, particularly the very complete chapter on flower photography. No better idea of its scope can be given than to quote a few headings: Flower Compositions Indoors; Plates; Illumination; Backgrounds; Arrangements; Focusing; Exposure; Getting Experience; Developers and Development; The Use of a Ray-Filter; Apparatus; Flowers in Their Natural Haunts; Weather Conditions; Reproducing Color. These indicate the wide field covered by this handbook, which is most attractively illustrated with flower photographs. Copies may be had of Marsh & Co., 712 Market St., San Francisco, postpaid 50c.

M. R. P.

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[*] *Notes on the Exploration and the Geography of the Northern Selkirks, British Columbia.* By Howard Palmer. Reprinted from the Bulletin of the American Geographical Society, Vol. XLIV, April, 1912.

[†] *Photographing Flowers and Trees and Decorative Photography.* By J. Horace McFarland. Tennant & Ward, New York. 1911.

"A YOSEMITE FLORA."*

"A Yosemite Flora" is the title of a most attractive hand-book by Professor Harvey Monroe Hall and Carlotta Case Hall. The sub-title indicates the scope of the book as "a descriptive account of the fern and flowering plants, including the trees, of the Yosemite National Park; with simple keys for their identification; designed to be useful throughout the Sierra Nevada Mountains." It is tastefully bound in brown leather, and is illustrated with eleven excellent photogravure plates and one hundred and seventy outline figures in the text. Being of convenient pocket size, 4½ x 7½ inches, printed in clear, pleasing type on light-weight paper, the book almost utters an audible "take-me-with-you" to one who wishes to know our mountain flora. The authors state that in preparing the manual they have "made use of every available source of information and have themselves botanized over much of the park." The grasses, sedges, rushes, and some of the *umbelliferæ* (parsley family) have been omitted, since the amateur botanist would find them too difficult to concern himself with them. As it is, the number of species and varieties described amounts to 955. The total number of flowering plants and ferns in the 1,124 square miles of the park is estimated to be not less than twelve hundred. The remarkably rich and varied character of this vegetation is due to the great variety of climatic and topographical conditions to be found within the area of the park.

These conditions and the various zones, determined by altitude, are discussed by the authors in an excellent introduction of sixteen pages. The reviewer is pleased to find that the authors have made no concession to that ephemeral kind of botanical interest which wants to determine flowering plants by means of a color key. The beginner is encouraged to begin his botanizing properly, from the beginning, by the use of a well-made analytical key which often is carried beyond the family to the genera. A glossary of technical terms, and illustrated explanations of leaf-forms, leaf-margins, venation and inflorescence, furnish safe and interesting guidance to anyone who wishes to know the fascinating and beautiful flora of the Sierra Nevada. The authors are to be congratulated on the production of this book, which should find ready sale and diligent use among members of the Sierra Club. Paul Elder & Co. are the publishers. W. F. B.

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* *A Yosemite Flora.* By HARVEY MONROE HALL, Assistant Professor of Botany in the University of California, and CARLOTTA CASE HALL. Paul Elder & Co., Publishers, San Francisco. 1912. Leather binding, 282 pages; beautifully illustrated. Price, $2.00.

"Alpina Americana."[*] The second number of *Alpina Americana,* the publication of the American Alpine Club, is devoted to a paper by Professor Charles E. Fay on the Canadian Rocky Mountains. Professor Fay is particularly qualified for this work, as he has spent many years in the exploration of this chain, and has made not a few first ascents, including Mts. Lefroy and Goodsir. The physical characteristics of the range are first discussed, and this is followed by a chapter on exploration and alpinism. A suggestion concerning nomenclature well worth noting is the adoption of the term "Canadian Alps" to apply to the whole system of mountains included in the Selkirk and "Canadian Rocky" ranges. Their identity at present is often confused, owing to the general use of the latter term to cover the whole mountain region. The wonderful photographs reproduced in this number would alone serve to make it a most noteworthy addition to any library.

M. R. P.

"The Forests."[†] This is a pamphlet recently published by John H. Williams. It is a chapter from the forthcoming book, "The Guardians of the Columbia," and includes many fine photographs, chiefly of the vicinity of Mt. Hood. The text is a paper on the Oregon forests by Mr. H. D. Langille.

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[*] *Alpina Americana.* "The Canadian Rocky Mountains." By Professor Charles E. Fay. Published by the American Alpine Club, Philadelphia, 1911. Postpaid, $1.10, upon application to the secretary, New London, Conn.

[†] *The Forests.* Published by John H. Williams, Tacoma. 1912. Price, 25 cents.

PUBLICATIONS OF THE SIERRA CLUB

No. 1.—Articles of Association, By-Laws, and List of Members.

Nos. 4 and 5.—Maps of Portions of the Sierra Nevada adjacent to the Yosemite and to Kings River, 1893.

No. 8.—Table of Elevations within the Pacific Coast, 1895, by Mark B. Kerr and R. H. Chapman.

No. 12.—Map of the Sierra Region, May, 1896.

Nos. 2, 3, 6, 7, 9, 10, 11, 13, together forming Volume I., Nos. 1-8, of the SIERRA CLUB BULLETIN.

Contents of Volume I.—Ascent of Mt. Le Conte; Address on Sierra Forest Reservation; California Outing; Crater Lake, Oregon; Diamond Hitch; Explorations North of Tuolumne River; Forest Reservations; From Fresno to Mt. Whitney, via Roaring River; From Gentry's to El Capitan and Yosemite Falls; Grand Cañon of the Tuolumne; Head-Waters of Kings River; Kern and Kings River Divide; Kings River and Mt. Whitney Trails; Knapsack Tours in the Sierra; Mt. Bernard; Mt. Tahoma; Mt. Whitney Trail; New Grove of Sequoia Gigantea; Notes on the Pine Ridge Trail; Route up Mt. Williamson; Search for a Route from the Yosemite to the Kings River Cañon; Sources of the San Joaquin; Three Days with Mt. King; Through Death Valley; Through the Tuolumne Cañon; Tramp to Mt. Lyell; Upper Sacramento in October; Notes, Correspondence, and Reports.

Nos. 14, 15, 16, 17, 18, and 19, together forming Volume II., Nos. 1-6, of the SIERRA CLUB BULLETIN.

Contents of Volume II.—Ascent of the White Mountains of New Mexico; Basin of the South Fork of the San Joaquin River; Conifers of the Pacific Slope, Parts I and II; Day with Mt. Tacoma; Early Summer Excursion to the Tuolumne Cañon and Mt. Lyell; Expedition of Prince Luigi Amedeo of Savoy to Mt. St. Elias; Explorations of the East Creek Amphitheater, from Mt. Rose to Mt. Shasta and Lower Buttes; Kaweah Group; Lava Region of Northern California; Mountain Trips: What to Take and How to Take It; Neglected Region of the Sierra; Observations on the Denudation of Vegetation—Suggested Remedy for California; On Mt. Lefroy August 3, 1896; On Mt. Lefroy August 3, 1897; Philip Stanley Abbot; Taking of Mt. Balfour; To Tehipite Valley from the Kings River Grand Cañon; Up and Down Bubbs Creek; Wanderings in the High Sierra Between Mt. King and Mt. Williamson,—Parts I and II; Woman's Trip Through the Tuolumne Cañon; Yosemite Discovery; Notes, Correspondence, and Reports.

No. 20.—Volume III., No. 1, pp. 1 to 118—Ramblings Through the High Sierra (Reprinted from "A Journal of Ramblings," privately printed in 1875); Editorial Notice; Ouzel Basin; Forestry Notes.

No. 21.—Ramblings Through the High Sierra. Same as No. 20. (Specially bound; without Editorial Notes, etc.)

No. 22.—Volume III., No. 2, pp. 119 to 188.—Lake Tahoe in Winter; Ascent of "El Yunque"; Another Paradise; Kings River Cañon Trail Notes; Ascent of "Matterhorn Peak"; Reports; Notes and Correspondence; Forestry Notes.

No. 23.—Volume III., No. 3, pp. 189 to 270.—Parks and Peaks in Colorado; The Work of the Division of Forestry in the Redwoods; The Mazamas on Mt. Jefferson; Wagon-Trips to the Sierra; The Big Basin; The Re-Afforesting of the Sierra Nevada; The Descent of Tenaya Cañon; An Ascent of Cathedral Peak; A Glimpse of the Winter Sierra; Notes and Correspondence; Forestry Notes.

No. 24.—Volume III., No. 4, pp. 271 to 339.—The Mazamas on Mt. Rainier; Lassen Buttes; From Prattville to Fall River Mills; Zonal Distribution of Trees and Shrubs in the Southern Sierra; Mt. Washington in Winter; Round About Mt. Dana; Notes and Correspondence; Forestry Notes; Reports.

No. 25.—Volume IV., No. 1, pp. 1 to 75.—Joseph Le Conte in the Sierra; El Capitan; Camp Muir in Tuolumne Meadows; The Sierra Club Outing to Tuolumne Meadows; In Tuolumne and Cathedral Cañons; The Great Spruce Forest and the Hermit Thrush; From Redding to the Snow-clad Peaks of Trinity County; Trees and Shrubs in Trinity County; Notes and Correspondence; Forestry Notes; Reports.

No. 26.—Vol. IV., No. 2, pp. 77 to 176.—Into the Heart of Cataract Cañon; My Trip to Kings River Cañon (Reprint); Conifers of the Pacific Slope, Part III; Birds of the High Mountains; Notes and Correspondence; Forestry Notes; Reports.

No. 27.—A Flora of the South Fork of Kings River from Millwood to the Head-Waters of Bubbs Creek.

No. 28.—Vol. IV., No. 3, pp. 177 to 252.—Among the Sources of the South Fork of Kings River, Part I; With the Sierra Club in Kings River Cañon; Red-and-White Peak and the Head-Waters of Fish Creek; Mt. Whitney, Whitney Creek, and the Poison Meadow Trail; A New-Year Outing in the Sierra; The Ascent of Volcano Mayon; Notes and Correspondence; Forestry Notes; Reports.

No. 29.—Vol. IV., No. 4, pp. 253 to 323.—Among the Sources of the South Fork of Kings River, Part II; the Coast Sierra from California to Panama; Ralph Sidney Smith (In Memoriam); Climbing Mt. Brewer; Table of Elevations of Peaks in the Sierra Nevada Mountains over 12,000 feet; Kings River Outing, 1902—Botanical Notes, etc.; Near the Kern's Grand Cañon; Reports; Notes and Correspondence; Forestry Notes.

PUBLICATIONS OF THE SIERRA CLUB—*Continued.*

No. 30.—Vol. V., No. 1, pp. 1 to 85.—The Ascent of the North Palisades; Variations of Sierra Glaciers; How Private Burns Climbed Mt. Pinatúbo; The Hillside Farmer and the Forest; The Notable Mountaineering of the Sierra Club in 1903; On the Trail with the Sierra Club; The Completed Le Conte Memorial Lodge; Reports; Notes and Correspondence; Forestry Notes.

No. 31.—Vol. V., No. 2, pp. 87 to 152.—Mt. Whitney as a Site for a Meteorological Observatory; The Water-Ouzel at Home; The San Francisco Peaks in April; Over Harrisons Pass with Animals; The Ascent of San Antonio; Secretary's Report; Treasurer's Report; Notes and Correspondence; Forestry Notes.

No. 32.—Vol. V., No. 3, pp. 153 to 270.—First Ascent: Mt. Humphreys; Address at Memorial Exercises; Mt. Lyell and Mt. Ritter Ascents by Sierra Club Outing of 1904; A Deer's Bill of Fare; Domes and Dome Structure of the High Sierra; Some Aspects of a Sierra Club Outing; The Evolution Groups of Peaks; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 33.—Vol. V., No. 4, pp. 271 to 328.—The Grade Profile in Alpine Glacial Erosion; Systematic Asymmetry of Crest-Lines in the High Sierra of California; The Tuolumne Cañon; Inscription for the Le Conte Memorial; Over Harrisons Pass from the North with a Pack-Train; California Forestry Law; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 34.—Vol. VI., No. 1, pp. 1 to 74.—The Sierra Club's Ascent of Mt. Rainier; Mt. Rainier, Mt. Shasta, and Mt. Whitney as Sites for Meteorological Observatories; The Sky-Line of the Tatoosh Range, Mt. Rainier National Park; The Effect of the Partial Suppression of Annual Forest Fires in the Sierra Nevada Mountains; In Memoriam; Joseph Le Conte; Wild Animals of Mt. Rainier National Park; The Sierran Puffball; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

All of above are out of print, having been destroyed in the fire of April 18, 1906.

No. 35.—Vol. VI., No. 2, pp. 75 to 152.—An Ascent of the Matterhorn; The Name "Mt. Rainier"; The Second Kings River Outing; The Motion of the Nisqually Glacier, Mt. Rainier; Report on the Kings River Cañon and Vicinity; Reports; Notes and Correspondence; Book Reviews; Forestry Notes; Revised By-Laws of the Sierra Club.

No. 36.—Vol. VI., No. 3, pp. 153 to 210.—The Aftermath of a Club Outing; Along the Foothills to Lake Chabot; Mt. Rose Weather Observatory; The Ascent of Asama-Yama; Reports; Secretary's Report; Treasurer's Report; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 37.—Vol. VI., No. 4, pp. 211 to 284.—The Hetch Hetchy Valley; To Joseph Le Conte, a Poem; Lake Ramparts; The Grand Cañons of the Tuolumne and the Merced; The Water-Ouzel, a Poem; Photograph of the Water-Ouzel; Bird Life of Yosemite Park; An Easterner's Impressions of a Sierra Club Outing; Indian Pictographs in Pate Valley; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 38.—Vol. VI., No. 5, pp. 285 to 336.—William Kent's Gift; Redwoods; The Mt. Ritter Knapsack Trip; A Knapsack Trip to Mt. Ritter; The Yosemite Waters; Snowfall in the Sierra Nevada; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 39.—Vol. VII., No. 1, pp. 1 to 84.—The High Mountain Route Between Yosemite and the Kings River Cañon; With the Sierra Club in the Kern Cañon; Down the Kern-Kaweah; An August Outing in the Upper Merced Cañon; Organization of Sierra Club; Reports; Notes and Correspondence; Book Reviews; Forestry Notes.

No. 40.—Vol. VII., No. 2, pp. 85 to 140.—Camping Above the Yosemite—A Summer Outing With the Sierra Club; From Kern Cañon to Giant Forest—The Chronicle of a Knapsack Trip; Up From "The Land of Little Rain" to the Land of Snow, Being the Journal of a Sledging Trip Up Mt. Whitney in Winter; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 41.—Vol. VII., No. 3, pp. 141 to 214.—The Observatory on Mt. Whitney; The Grand Circuit of the Yosemite National Park—Down Tenaya Cañon; On Mt. St. Helens With the Mazamas; A High Sierra Circuit on Headwaters of Kings River; Organization of the Sierra Club; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 42.—Vol. VII., No. 4, pp. 215 to 274.—Galen Clark; The Grand Cañon of the Tuolumne; Little Studies in the Yosemite Valley; The New Glacier National Park; The Ascent of Fujiyama; The Proposed Estes National Park; Winter in the High Sierra; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 43.—Vol. VIII., No. 1, pp. 1 to 86.—Cathedral Peak and the Tuolumne Meadows; Little Studies in Yosemite Valley; The Kings River Outing of 1910; A Vacation Trip to Mount Kinabalu in British North Borneo; Ascent of Red Peak; The Discovery of the Nest and Eggs of the Gray-Crowned Leucosticte; The Passing of Our Mountain Meadows; Fire and the Forest—The Theory of "Light Burning"; Organization of the Sierra Club; Reports; Notes and Correspondence; National Parks; Trout Planting; Forestry Notes; Book Reviews.

No. 44.—Vol. VIII., No. 2, pp. 89 to 149.—Little Studies in the Yosemite Valley; Four Mexican Volcanoes; Stevenson and California; Early Summer Birds in the Yosemite Valley; Reports; Notes and Correspondence; Forestry Notes; Book Reviews.

No. 45.—Vol. VIII., No. 3, pp. 150 to 248.—With the Sierra Club in 1911; Some Birds of the High Sierra; Knapsacking Across the Kings-Kern Divide; The Devil's Postpile; The Mazama Club Outing to Glacier Peak; Sherbrooke Lake Outing of the Alpine Club of Canada; The Golden Trout of Cottonwood Lakes; A Plea for the Conservation of Wild

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